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ABSTRACT

An attempt is made to determine whether a behaviorally-oriented conditioning approach, "covert sensitization," is more effective in the treatment of alcoholism than the commonly used problem-solving approach, and whether female counselors employing covert sensitization were more successful than males. Thirty-two subjects selected on admission to an in-patient alcoholism facility were assigned to two treatment groups for the purpose of statistical comparison and evaluation. Eight specially prepared staff counselors (four males, four females) conducted covert sensitization with patients in treatment group one; they also participated at least 50% of the time with other staff counselors in treatment group two. A three-month period of abstinence following discharge was selected as the criterion measure in determining the results of treatment outcome. Appropriate statistical analysis of the criterion data yielded empirical support for both of the hypotheses tested. (Author/BW)

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THE UNIVERSITY OF ALBERTA

COVERT SENSITIZATION TREATMENT WITH ALCOHOLICS

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by

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled Covert Sensitization Treatment with Alcoholics submitted by David Lorenzo Fleiger in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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Dedication

The study reported in this manuscript is dedicated to the memory of Reverend Lawrence J. Bonner, whose behavior exemplified what the writer believes is a necessary attitude for scientific inquiry. — "quecumque sunt vera."

ABSTRACT

An attempt was made to determine whether a behaviorally oriented conditioning approach, "covert sensitization," is more effective in the treatment of alcoholism than the commonly used problem-solving approach; and whether female counselors employing covert sensitization were more successful than males.

A sample of thirty-two subjects selected on admission to the Henwood Rehabilitation Centre, an in-patient facility of the Division of Alcoholism in the province of Alberta was assigned to two treatment groups for the purpose of statistical comparison and evaluation.

Eight staff counselors (4 males, 4 females) especially prepared in a two-week, in-service workshop conducted covert sensitization with patients in treatment group one; they also participated at least fifty percent of the time with other staff counselors in the problem-solving approach utilized in treatment group two.

A three-month period of abstinence following discharge from Henwood was selected as the criterion measure in determining the results of treatment outcome. Appropriate statistical analysis of the criterion data yielded empirical support for both of the hypotheses tested.

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CHAPTER I

Introduction

Franks (1958, 1966) states that alcoholism is a recognized social, economic, and therapeutic problem that has captured the attention of countless therapists, research workers, and theorists. Results of attempts to cope with the problem suggest that the era of a "cure" is distant. Indeed, it would appear that a preventive approach directed toward the elimination or control of the urge to drink is still the most basic and realistic objective in the treatment of alcoholism.

In the last ten years there has been an accelerated interest in the application of the principles of behavioristic learning theory to the understanding and modification of behavior (Eysenck, 1960, 1964; Ullman and Krasner, 1965; Krasner and Ullman, 1965; Rachman, 1963; Lovibond, 1966; Grossberg, 1964) and to the treatment of alcoholism in particular (Eysenck and Rachman, 1965; Franks, 1963; 1964, 1966). One such promising conditioning approach toward the treatment of maladaptive behaviors such as obsession, compulsion, homosexuality, drinking, and stealing has been advanced by Cautela (1966, 1967). This procedure, labelled covert sensitization, makes use of covert or imagined stimuli for both the conditioned stimulus and the unconditioned stimulus. No external aversive stimuli are presented. The

present study is a further effort to establish the usefulness of such an approach.

In the experimental research reported in this study the following assumptions are made: First, while alcoholism is a multi-faceted and complex phenomenon, it is a behavioral problem; second, therapy must be directed toward the cessation of excessive drinking behavior per se before constructive progress is made toward the modification of its antecedent or consequent accompaniments; third, that a behaviorally oriented therapeutic approach competently conducted and utilizing extensions of empirical research and theorization can effectively modify maladaptive drinking behavior and so allow an individual a period of time during which alternative and more rewarding modes of response can be established and strengthened. These assumptions are supported in Chapter II, The Problem of Alcoholism: Related Research, and in Chapter III, An Approach to Modification of Drinking Behavior: Theoretical Orientation.

It is proposed that covert sensitization — a relatively new technique based on the principles of aversion therapy — can effectively modify a self-defeating (drinking) behavior, thereby affording an individual the opportunity to develop more satisfying pro-social forms of behavior.

The validation of the hypotheses proposed in this study was sought at Henwood, a modern sixty-four bed residential unit for

alcoholics, located seventeen miles northeast of Edmonton, Alberta, and operated by the Alcohol Foundation of Alberta. Subjects were randomly assigned to one or two treatment groups according to the design outlined in Chapter IV. Volunteer staff counselors carried out behavior therapy and also participated at least fifty percent of the time in regular Henwood treatment sessions.

The purposes of this experimental study were: first, to determine the efficacy of covert sensitization in the modification of excessive drinking by comparing it with the present treatment procedure in a controlled and systematic manner; second, to establish a research base in behavior therapy in a residential setting in which extensions of the approach could continue to be scientifically investigated.

CHAPTER II

The Problem of Alcoholism: Related Research

In this chapter terms will be defined, the significance and extent of the problem of alcoholism will be discussed, theories of the causation of alcoholism will be described, and studies on attempts to eliminate alcoholism by different approaches will be outlined.

Definition of Terms

There are many definitions of alcoholism, and the selection of a single one is an arbitrary matter. Studies use different criteria in the selection of subjects. The Division of Alcoholism of Alberta suggests that: (1) "alcoholism is a medically recognized disorder with physical, psychological and social components in its origin and development (1970 a);" (2) "alcoholism exists when a person's drinking is creating serious problems in the major areas of his life — domestic, social, vocational (1970 b)." Such statements have descriptive value, but their generality and vagueness render them unsuitable for research purposes. In this study, the following definitions are used:

Alcoholic - Any male individual admitted to Henwood for treatment.

Abstinence - Refrainment from drinking alcoholic beverages at all times, or with rare exceptions, for a period of three months after discharge from Henwood.

Literature will be reviewed that deals with two vital questions: Why do some people drink to excess? What can be done to alter a pattern of excessive drinking behavior:

Significance and Scope of the Problem of Alcoholism

Canada's alcoholic population appears to be rising more rapidly than the general population increase. Figures published by Ontario's Alcholism and Drug Addiction Research Foundation (1967, p. 119) show:

	Canada's Alcoholic Population	Rate per 100,000
1951	132,260	1,520
1964	255,250	2,310

The reported net increase in the alcoholic population from 1951 to 1964 is almost 123,000, or an average yearly net increase of approximately 9,500, about twenty-six new alcoholics every day.

A recent study conducted by the Division of Alcoholism estimated approximately 16,000 alcoholics in Alberta. It shows a net increase of about 3,000 new alcoholics in the past six years — an annual increase of some 500 new alcoholics.

In view of the aforementioned provincial and national figures, as well as the sizable number of people whose excessive drinking has brought them to the attention of law enforcement, welfare, church, and other agencies of society, it appears that the need for research into causes and successful modification through more effective and efficient treatment procedures is greater now than ever before.

Theories of Causation of Alcoholism

Much of modern theorization regarding the nature and development of alcoholism is based on two major psychological systems. One is the psychoanalytic theory of personality, and the second is learning and conditioning theory.

Psychoanalytic Theories of Causation

Two well-known theories have been advanced to account for causation of alcoholism: Freudians attribute alcoholism to one of three unconscious tendencies: self-destructive urges, oral fixations, and latent homosexuality; Adlerians explain alcoholism as a striving for power, a reaction to pervasive feelings of inferiority.

Menninger (1938) is perhaps the best known proponent of the idea that alcoholism is a form of self-destruction. In Menninger's opinion, the alcoholic is characterized by a strong desire to destroy himself. He held that a person's suicidal intentions are unconscious and emerge from feelings of being betrayed in early childhood when parents led him to expect more oral gratification than he received. When his oral desires were frustrated by severe weaning, the child was overcome with rage and a desire to attack the parents. Menninger stated, "the alcoholic suffers at the same time from the wish to destroy his love objects and the fear he will lose them (p. 170)." Since he does not attack the real causes of his rage, the alcoholic turns to drinking as a form of oral gratification and as a way of

seeking symbolic revenge against his parents. Menninger viewed alcoholism as:

> a form of self-destruction used to avert a greater self-destruction, deriving from elements of aggressiveness excited by thwarting, ungratified eroticism, and the feeling of need for punsihment from a sense of guilt related to aggressiveness (p. 198).

Fenichel (1945) regarded oral fixation as the prime cause of alcoholism and held that passive, dependent, narcissistic urges characterized by a wish to use the mouth as a prime source of gratification are the bases of alcoholism. Latent homosexuality, related in Freudian theory to oral tendencies, has often been cited in psychoanalytic literature as the unconscious drive behind alcoholics. According to Abraham (cited in Fenichel, 1945, p. 336) the alcoholic turns away from his frustrating mother and seeks comfort from his father, but because of over-identification, latent homosexual tendencies develop. As a substitute for overt homosexuality alcoholics express their deviant urges through excessive drinking.

Adlerians, differing from Freudians, hold that alcoholism is an attempt to remove profound feelings of inferiority. Adler, (1946) as a result of his experience in the analysis of alcoholics concluded that inferiority lies at the bottom of this condition, "... feelings of inferiority marked by shyness, a liking for isolation, ov[illegible]-anxiety, impatience, irritability and by neurotic symptoms

like anxiety, depression, and sexual insufficiency (p. 423)." The major premise in the Adlerian position is that feelings of inferiority cause a person to use alcohol as a means of overcoming his anxiety.

In summary, a wide variety of personality disturbances have been proposed by psychoanalytic theories as the underlying determinants of alcoholism. Among the most widely accepted interpretations are those that postulate alcoholism as derived from latent homosexuality related to fixation on "passive-narcissistic" aims. Oral dependent needs and other characterological structures are frequently invoked as vital predisposing factors in the excessive use of alcohol. Self-destructive urges, feelings of inferiority, and unconscious needs to dominate have also been proposed as determinants of alcoholism.

It should be noted, in connection with the Freudian and Adlerian theories, that certain comparative studies of alcoholics and non-alcoholics (Sutherland, Schroeder, Tordella, 1950; Syme, 1957) failed to identify specific personality traits or underlying dynamics that clearly differentiate alcoholics from other deviant groups. Further evidence in support of such findings was offered in a study by McCord and McCord (1959) which traced approximately 250 boys twenty years after they had first received psychological treatment. The study was designed to validate empirically the

genesis of alcoholism as suggested by psychoanalytic formulations. McCord and McCord reported that, as a group, alcoholics were not more disturbed by oral tendencies, homosexual urges, or inferiority feelings in childhood than were control subjects.

Learning Theory of Causation of Alcoholism

Reinforcement principles have been used to account for the causation of alcoholism by Miller (1950), Shoben (1956), Kingham (1958), Franks (1958), Eysenck and Rachman (1965).

Basic to this position is the assumption that people learn because the responses they make are followed by reward or punishment. According to Dollard and Miller (1950) much of human learning consists of four fundamental factors: drive, cue, response, reinforcement; that is, there must be: 1. A drive, either primary or innate such as pain, thirst, sex, or a learned or secondary drive such as fear; 2. A cue, a stimulus in the environment which can have drive value, impelling the person to respond. A stimulus can also be distinctive; that is, it can serve as a cue to elicit a specific response. 3. A response, a behavior, either a motor act or a non-overt event such as a thought or fantasy; 4. A reinforcement — either a reward which results in a tendency to repeat the act or a punishment which results in a tendency to weaken the act.

Of vital importance to the position of Dollard and Miller is the relationship that exists among these four fundamental factors:

> The drive impels responses, which are usually also determined by cues from other stimuli not strong enough to act as drives but more specifically distinctive than the drive. If the first response is not rewarded by an event reducing the drive, this response tends to drop out and others to appear. The extinction of successive non-rewarded responses produces so-called random behavior. If some one response is followed by reward, the connection between the cue and this response is strengthened, so that the next time that same drive or other drives are present, this response is most likely to occur. This strengthening of the cue and response is the essence of learning (pp. 29, 30).

In reinforcement terminology, Kepner (1964) and Lazarus (1965) viewed alcohol usage as a source of two important rewards. First, the physiological changes produced by alcohol induce intensely pleasurable feeling states in the individual; second, alcohol may also provide temporary relief from unpleasant or punitive stimuli such as anxiety, guilt, or tension. The individual learns he can deter these aversive stimuli by reaching for the bottle. Consequently, each time he does this and experiences relief or pleasure, the drinking response is reinforced and the tendency to repeat the act is strengthened. Eventually, the individual uses alcohol to avoid every problem and becomes an alcoholic.

Review of Empirical Studies

In the following sections some of the findings of empirical studies will be reviewed. Such studies were carried out to determine the effects of alcohol on emotional arousal and reactivity and on avoidance and escape responses. In addition, findings of

some studies designed to measure determinants of voluntary alcohol consumption will be reported.

Experimental studies carried out by Carpenter (1957) and Greenberg and Carpenter (1957) reported findings that suggested that alcohol can produce substantial reduction in affective arousal when taken in moderate to large doses. In these studies, the subject's physiological responses were measured prior to and following the ingestion of alcohol, with basal conductance level and magnitude of galvanic skin responses to specific stressor stimuli serving as indices of emotional responses. These studies have a direct bearing on the reinforcing qualities of alcohol and suggest clear evidence of the pharmacological properties of alcohol that make it a powerful reinforcer.

Studies by Masserman and Yum (1946) and Conger (1951) provided further evidence of the stress-reducing properties of alcohol. In animal studies designed to measure disinhibitory effects and extinction responses, Masserman and Yum trained cats to perform complex manipulations to secure food. Subsequently, the cats inhibited their instrumental manipulatory and approach responses after being shocked at the goal.

After receiving small doses of alcohol, however, they promptly engaged in approach behavior designed to obtain food rewards. In addition, the cats developed a preference for milk cocktails, containing five percent alcohol, to plain alcohol during a series of shock trials, but reverted to their original preference for nonalcoholic drinks after

the shock had been discontinued.

Conger (1951) trained one group of animals to obtain food by running to a lighted point in a maze, and a second group to avoid the lighted point to escape electric shock. His findings suggested that alcohol injected into subjects served to reduce the avoidance tendency and allowed the animal to reach the food. Conger perceived three sources of reinforcement in the effects of alcohol in these animals:

> In the present case we would expect a reduction in fear to reinforce learning of the drinking habit. In addition, if alcohol removes the fear-motivated behaviour in conflict situations and permits the satisfaction of drives whose goal responses have been inhibited by conflict, further reinforcement for the drinking habit may be provided. Finally, if conflict per se is tension-producing, resolution of the conflict, by means of alcohol, could serve as yet another source of reinforcement (p. 24).

These experimental data are based on the forced administration of moderate doses of alcohol and indicates that alcohol can produce significant reductions in autonomic arousal and emotional behavior elicited by aversive environmental conditions. Studies concerned with variables governing the voluntary intake of alcohol will be reviewed next.

As noted earlier, Masserman and Yum (1946) reported findings that animals who had initially preferred plain milk to an alcoholic milk solution developed a preference for alcohol during periods of shock-induced stress but reverted to nonalcoholic drinks when the shock was terminated and fear was extinguished. A study by Clark and Polish (1960) measured the intake of water and a 20 percent alcohol-water solution by

monkeys before, during, and after avoidance training. In each case minor changes in water intake occurred across each phase. However, alcohol intake increased during and decreased following avoidance conditioning sessions. Casey (1960) presented findings that suggested that punishment administered on a noncontingent and unpredictable basis (variable interval) may further increase the effectiveness of alcohol as a positive reinforcer under conditions of aversive stimulation.

The research discussed above indicates that excessive drinking behavior is maintained through positive reinforcement derived from the central depressant and anesthetic properties of alcohol and that persons subjected to greater environmental stress are more prone to use alcohol for its stress-reducing effects than are persons who experience less stress.

In addition to these major determinants of alcoholism, Bandura (1969) suggested that an adequate theory of alcoholism must embrace social learning principles and both aversion reduction and positive reinforcement elements. According to Bandura,

> alcoholics are people who have acquired, through differential reinforcement and modeling experiences, alcohol consumption as a widely dominant response to aversive stimulation (p. 536).

He also suggested that

> in advanced stages biochemical, stress reduction and social reinforcement mechanisms may contribute to the maintenance of addictive drinking (p. 537).

In summary, various theoretical formulations have been advanced to explain the causation of alcoholism. Some, for example,

psychoanalytic propositions, are based on a posteriori assumptions derived from clinical experiences; others, such as reinforcement theory interpretations are derived from a priori reasoning whose validation has been demonstrated in empirical research. Regardless of what theory of alcoholism one espouses, it is obvious that the elimination or drastic modification of alcoholic behavior is of major significance.

Studies of Attempts to Eliminate Alcoholism

Since the present study employs a new, behavior-oriented conditioning approach, the literature concerning this topic is reviewed in order to provide some answer to the second question posed: What can be done to alter a pattern of excessive drinking behavior?

Data on these studies and their outcome are presented in tabular form on Page 19.

Although the experimental foundation of classical conditioning was first demonstrated by Pavlov in 1901, the application of aversive conditioning to the treatment of alcoholism had its origin in antiquity. For example, Thimann (1949) cites Pliny the Elder's Historiae Naturalis describing various conditioning methods such as placing dead spiders in the drinker's glass so as to establish a revulsion to alcohol.

Kantorovich (1930) of the Soviet Union is credited as being the first scientist to apply a conditioning procedure to treat alcoholism. He used electric shock as the unconditioned stimulus (US) along with the actual presentation of liquor as the conditioned stimulus (CS).

Following Kantorovich, most investigators until recent times

have substituted drugs for electric shock as aversive stimuli (Franks, 1966). The three drugs most commonly used to produce aversive unconditioned stimuli were apomorphine (a non-additive derivative of morphia); emetine (an alkaloid of ipecacuanka); and antabuse (disulfiram). Voegtlin and Lemere (1942) cited the following scientists as being among the first users of apomorphine: Sluchevsky and Friker (1933), Markovniko (1934) and Galant (1936) in the Soviet Union, Ko (1936) in Belgium, Dent (1934) in the United Kingdom, and Fleming (1937) in the United States. Martimor and Maillefer in France (1936) described a technique in which emetine was dissolved in wine and given to the patients daily over a period of several weeks.

In the 1940's aversive conditioning procedures varied little from those employed during the preceding decade. Emetine and apomorphine continued as the two most widely used nausea-inducing agents.

The work of Lemere and Voegtlin (1950) was a survey of 4,096 patients treated by the conditioned-reflex method between May 1935, and October 1948, at the Shadel Sanitarium* in Seattle. It stands out in sharp relief as one of the few exceptions to this trend. As a direct result of their investigation, they rejected further use of apomorphine as an aversion-

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*Shadel technique. The "Shadel" treatment consists of treatment for the patient in a sound-proof room purposefully designed for the individual's physical comfort. Lighting is subdued except for an array of liquors which is spot-lighted to command the patient's maximum attention. A large vomiting bowl is attached to the patient's armchair. The patient is given an injection containing a mixture of emetine hydrochloride (to induce nausea and vomiting), ephedrine (to combat any possible drop in blood pressure) and pilocarpine (to produce sweating and salivation), Voegtlin (1940).

producing drug on the basis of its side effects, which included severe shock reactions and sedative reactions interfering with conditioning.

Findings such as the increased effectiveness of partial reinforcement over continuous reinforcement, the use of stimulant drugs to facilitate conditioning, the differences that exist among individuals in conditionability, and the desirability of overlearning are salient factors in classical conditioning studies (Franks, 1958, 1963, 1964; Eysenck, 1964).

Two other scientific investigators deserve mention. They are Thimann (1949) for his use of such procedures as individual and group psychotherapy, part-time hospitalization, and manipulation of the patient's environment to supplement conditioning; and Kant (1945), who employed a modified version of the Shadel technique making use of benzedrine sulfate to facilitate the conditioning process. Kant also recommended a reconditioning session after a three-to six-month interval.

In recent developments the therapeutic possibilities of aversion therapy have been studied by a number of investigators. Raymond (1964) employed apomorphine in an aversive conditioning paradigm constructed to ensure the maximum amount of conditioning together with a minimum rate of extinction. Miller, Dvorak, and Turner (1960) used a modified version of the Voegtlin procedure with four groups of twenty subjects and found that all developed very effective conditioned aversion to various forms of alcohol presented to them. Three Canadian investigators (Sanderson, Campbell and Laverty, 1963), employing the drug

scoline (succinylcholine chloride dihydrate), developed a dramatic and highly complicated technique that threatens respiration itself. For a period of sixty to ninety seconds immediately following an injection of scoline, the patient is totally paralyzed, unable to breathe, move, or otherwise communicate his distress. Throughout this period he retains his intellectual and emotional faculties. Hsu (1965) reported the use of faradic stimulation in a combined operant and classical situation. By means of a pre-set timer the patient literally shocks himself after he has swallowed an alcoholic beverage. Blake (1965) combined relaxation training with electrical aversion. In a three-part program, patients received relaxation training, motivation arousal (counseling as to the undesirable consequences of alcoholism), and aversion conditioning proper.

Successful results in the treatment of alcoholism have been reported by several investigators employing covert sensitization (Cautela, 1966, 1967; Anant, 1967, 1968; Ashem and Donner, 1968). First described in detail by Cautela (1966), this procedure required the subject to imagine that he is becoming nauseous and that he vomits as he is about to engage in drinking behavior. After careful behavioral analysis of the subject's drinking behavior, covert sensitization is combined with other behavior modification techniques to reduce the drive component of anxiety. Since such a procedure does not require the use of drugs or faradic shock, it eliminates the undesirable side effects noted earlier.

In a recent paper McBrearty, Gearfield, Dichter, and Heath (1968) describe a behaviorally oriented treatment program for alcoholism that utilizes a number of strategies based on behavior modification principles. In accord with Lazarus' (1965) position, these authors recognized that excessive drinking behavior is but a facet of a complex process that includes antedating responses that are tied to the consummatory (drinking) behavior. They say that such responses, too, must be modified.

It is evident from the literature reviewed that alcoholism is an extremely complex and difficult problem. Recent developments employing a variety of strategies, e.g. covert sensitization, within a learning theory — behavior therapy context demonstrate support for a behaviorally oriented treatment approach. In the search for more effective procedures to facilitate the treatment of alcoholism, covert sensitization appears to be an extremely valuable procedure in helping alcoholics to cope effectively with their problems.

TABLE 1

SUMMARY OF ABSTINENCE RATES
OBTAINED BY AVERSION THERAPY*

Investigator	No. of Cases	Aversive Stimulus	Complete Abstinence (%)	Period of Follow-up
Kant (1945)	31	Emetine	80	Unspecified
Thimann (1949)	275	Emetine	51	3-7 years
Lemere and Voegtlin (1950)	4,096	Emetine	51	1-10 years
Miller, Dvorak, & Turner (1960)	10	Emetine	50	8 months
Kantorovich (1934)	20	Electric Shock	82	3 weeks-20 months
Blake (1967)	25	Electric Shock	23	12 months
	37	Electric Shock with relaxation	48	12 months
Anant (1967)	26	Verbally induced aversion	96	8-15 months
Ashem & Donner (1968)	15	Verbally induced aversion	40	6 months

*Table I summarizes the percentage of complete abstinence obtained by different investigators employing aversion therapy. Variability in abstinence rates probably reflects the different time intervals chosen by the investigator for follow-up. It may also reflect the presence or absence of further supplementary conditioning trials after formal treatment concludes. It has been reported by Voegtlin and Lemere (1942) that abstinence rates are positively correlated with the number of supplementary conditioning sessions.

CHAPTER III

An Approach to the Modification of Alcoholism: Theoretical Rationale

Chapter III presents a theoretical orientation to one approach to the modification of alcoholism. It demonstrates that a behaviorally oriented therapeutic approach based on modern learning theory and principles of conditioning can be expected to be successful in the elimination or control of alcoholism and its behavioral accompaniments.

The process of behavior change implicit in this procedure is assumed by the investigator to be partially mediated by symbolic events. It assigns to the subject the role of active participant in the total treatment process. Under certain conditions this assumption suggests that internal stimuli (thoughts) are functionally equivalent to external stimuli (observable acts). Evidence will be presented in support of this assumption.

Theory

Eysenck, one of the foremost proponents of modern learning theory and behavior therapy, views neuroses as the product of learning, and not of innate, instinctive, or organic origin. In his theorization Eysenck (1959) postulated the acquisition of neurotic behavior as a simple process of classical Pavlovian conditioning and neurotic symptoms as learned patterns of behavior which for some reason remain unadaptive. The paradigm of neurotic symptom formation is Watson's famous

experiment with little Albert, a nine-month old boy who was fond of white rats (Watson and Raynor, 1920). Watson was able to make the boy rat phobic by standing behind him and striking a hammer on a suspended steel bar whenever Albert reached for the rat. The animal was the conditioned stimulus (CS) in the experiment, and the loud fear-producing noise was the unconditioned stimulus. As predicted, the unconditioned response (fear) became conditioned to the CS (the rat), and Albert developed a phobia for rats, and indeed for all furry animals. This latter aspect is accounted for by the generalization gradient.

This example illustrates how various types of conditioned responses through a process of conditioning become attached to previously neutral stimuli or events and by a process of stimulus generalization, primary or secondary, are transferred to new stimuli (Eysenck and Rachman, 1965; Osgood, 1962). Of course, not all responses acquired through a contiguous relationship are necessarily neurotic; some indeed are necessary for human survival. Neurotic behavior is distinguished from other types of behavior by its maladaptiveness. Neurotic symptoms are learned patterns of behavior which remain unadaptive (Eysonck, 1959, p. 32). In similar vein, Wolpe (1958) stated:

> Neurotic behavior is any persistent habit of unadaptive behavior acquired by learning in a physiologically normal organism. Anxiety is usually the central constituent of this behavior, being invariably present in the causal situations (p. 32).

Individual differences of speed and firmness in the acquisition of conditioned responses, and the amount of reinforcement that occurs,

determines, in part, the amount of conditioning that takes place. Physiological differences in autonomic reactivity account for the remaining variance exhibited in individuals. Some individuals, for example, react more emotionally than others to anxiety producing stimuli like pain and fear. In any event, neurotic behavior is learned behavior (Eysenck and Rachman, 1965).

All the possible abnormal reactions an individual acquires fall into two major classes of neurotic symptoms, surplus conditioned reactions, and deficient conditioned reactions. Surplus conditioned reactions such as fear reactions, anxiety reactions, and phobias are unadaptive even though originally suited to the circumstances; deficient conditioned reactions, acquired normally by most individuals in society through the process of socialization are adaptive, but because of defective conditioning powers, have not been acquired by particular individuals (Eysenck, 1959).

Two major types of neurotic disorders exist: disorders of the first kind, for instance, phobic reactions, anxiety states, obsession and compulsion disorders caused by conditioned autonomic fear responses and the reactions skeletal, muscular, and hormonal of the organism of these conditioned responses, and disorders of the second kind that result from the failure of a conditioning process to occur which would produce socially desirable habits (Eysenck and Rachman, 1965).

Eysenck and Rachman (1965) state:

> In disorders of the first kind there has been a process

> of conditioning which, through non-reinforcement, should lead to spontaneous remission. In disorders of the second kind there has been a failure of conditioning to occur, or, when conditioning has occurred, it may be expected to be reinforced in any accidental evocation of the conditioned stimulus, neither of these conditions would lead to extinction, and consequently we cannot expect spontaneous remission to occur (p. 8).

Because neurotic responses are learned maladaptive habits, Eysenck (1959) postulated a method by which they could be unlearned by utilizing learning principles. He states that "one method of extinguishing the neurotic response X to a given stimulus S is to condition another response R to S, provided that R and X are mutually incompatible (p. 65)." Theoretically speaking it is possible to condition another incompatible or antagonistic response to the conditioned or discriminative stimulus.

Eysenck observed earlier successes by Jones (1924) and Jersild and Holmes (1935) in the "unlearning" of experimentally induced fear in children as evidence of the power and validity of counterconditioning. Clinical evidence involving adults of either sex carried out by Herzberg (1941) and Wolpe (1958) provide additional support for counterconditioning procedures in the elimination of severe and debilitating neuroses.

Since this procedure makes use of aversive events (symbolically induced) for the purpose of modifying drinking behavior, several lines of evidence will now be presented to suggest that behavior is to some extent determined by and subject to internal regulation.

Perhaps the first significant evidence that behavior is not totally determined by external stimuli alone is provided by Pavlov's conceptualization of a second signal system. According to Pavlov (1957) words can come to stand for the sights and sounds of the first signal system. If a word is frequently encountered together with the object that the word represents, the object will acquire an association with the word, and the word will evoke responses appropriate to the object.

In avoidance conditioning experiments, Solomon and Turner (1962) presented evidence of avoidance responses being mediated through either the central nervous system or the autonomic feedback mechanism. Animals were first conditioned to make an avoidance response to a light stimulus, then curarized to prevent avoidance responses from being conditioned directly to external stimuli, finally shocked with one tone paired with it while a contrasting tone was never associated with aversive stimulation. In subsequent tests, the animals exhibited arousal reactions to the negatively valenced tone and the light but rarely showed avoidance responses to the neutral tone.

In a paper devoted to the control of implicit events Homme (1965) maintained that private events (thoughts) obey the same laws as public events (actions). Thus, thought-induced responses can exercise covert control over one's overt actions. Indirect support for Homme's stance is provided from desensitization studies of Wolpe (1958) and Paul (1966) which relied heavily on the use of imagery and other covert processes

in the modification of various maladaptive behaviors.

In a case study, Gold and Neufeld (1965) provided evidence of the efficacy of symbolically imagined aversive stimuli in the treatment of homosexuality. Cautela (1966) modified the treatment procedure advocated by Gold and Neufeld and reported suggestive evidence in support of the use of imagined stimuli in the amelioration of compulsions to overeat and drink to excess. Cautela (1970) presented additional anecdotal evidence to suggest that reinforcement in imagination (covert reinforcement) is capable of modifying both undesirable approach behavior such as stealing, overeating, excessive drinking, and avoidance behavior such as anxieties and phobia.

Results of numerous investigations of classical conditioning, Bridger and Mandel, 1965, Clark, 1963, MacKay and Laverty, 1963, revealed extensive mediational control of conditioned autonomic responses. In a controlled laboratory investigation, Barber and Hahn (1964) demonstrated that subjects can acquire conditioned (affect) responses when instructed to engage in fear-producing thoughts analogous to the actual occurrence of aversive stimulation.

While the evidence presented suggests that a causal relationship exists between cognitive variables and conditioning outcomes, it should not be concluded that all conditioned responses are symbolically mediated. For example, the experimental investigations of Bykov (1957) and Razran (1961) provide ample and unequivocal evidence of conditioned

effects when either conditoned stimulus or unconditioned stimulus, or both are delivered directly to cerebral nerve sites. What is suggested is that conditioning, itself, may be partially mediated through symbolic activities.

Covert Sensitization

The procedure and rationale of covert sensitization, as applied to alcoholism, is described in detail in Appendix A. In brief outline, it consists of a thorough behavioral analysis of the subject's drinking behavior by means of discussion and the employment of a specially constructed questionnaire. Information is gathered pertaining to the history of the drinking problem, frequency of the present drinking behavior, where the subject usually does his drinking, what alcoholic beverages he drinks, and what antecedent conditions precede his drinking behavior. Other behavioral techniques of relaxation and positive (covert) reinforcement are employed in conjunction with the application of covert sensitization and at the same time since it is usually necessary to treat the drive or anxiety component that accompanies the drinking behavior.

Covert sensitization, itself, consists of the unlearning and relearning of more effective behavioral responses through a counter-conditioning paradigm. In the utilization of the procedure, the subject is trained to relax, then to imagine that he is about to engage in a compulsion (taking a drink), then to imagine the occurrence of an aversive event (nauseous scene) before committing the compulsive act (drinking).

This is a punishment procedure. Kushner and Sandler (1966) reported evidence that indicates punishment is effective in reducing the frequency of responses and that the reduction can be long-lasting or permanent. The subject is then told that he feels better as soon as he turns away from the aversive object. This step is analogous to an escape procedure which occurs when a particular behavior terminates the presentation of a noxious stimulus.

In summary, the image of the desired object (conditioned stimulus) is paired with the image of an aversive stimulus (also a conditioned stimulus). The imagined aversive conditioned stimulus forestalls the occurrence of the wanted conditioned stimulus and ultimately interferes with the commission of the act. Three aspects of this procedure are noted: First, the subject demands the occurrence of the thought or coverant (Homme, 1965). The reinforcement for the occurrence of the thought is the removal of the aversive stimulus; second, the coverant elicits fear which, in turn, reduces the frequency of the undesirable thought occurrence; third, as escape or avoidance behavior continues to be reinforced, the subject no longer has the urge or temptation for the particular stimulus.

Research Support for Covert Sensitization

Since Cautela's (1966) initial report a modest yet impressive account of clinical findings in support of covert sensitization has been recorded by several investigators. Stuart (1967) noted the successful application of covert sensitization with two subjects in the treatment

of obesity. These subjects, part of a large group receiving behavior therapy for overeating, were able to reduce between-meal eating, without any disturbance of normal food intake at regular mealtime. In an experimentally controlled study designed to investigate the critical variables involved during covert sensitization, Barlow, Leitenberg, and Agras (1968), working with a twenty-five-year-old married male with a thirteen-year history of pedophilic experiences, succeeded in identifying the pairing of extremely noxious scenes with scenes of the pedophilic experiences as the critical variable in the reduction of the deviant behavior. Galvanic skin responses (GSR) used as an index of the subject's arousal during acquisition-extinction-reacquisition phases of treatment yielded data significant beyond the .05 level.

Viernstein (1968) used three treatment groups, covert sensitization, an educational program, and a control group in an attempt to alter the smoking behavior of twenty-eight female college students. Following treatment, subjects who received covert sensitization (N= 7) smoked fewer cigarettes at immediate post-treatment ($p < .01$) and at a five-week follow-up ($p < .05$) than subjects in the education program and the control groups.

Davison (1968) demonstrated successful elimination of sadistic fantasy by imaginal aversive counterconditioning. The critical part of the therapy entailed client-controlled masturbation scenes in which strong sexual feelings were paired with pictures and images of females in a non-sadistic context. This positive conditioning was supplemented

by imaginal aversive counterconditioning wherein an extremely disgusting scene was paired in imagination with a typical sadistic fantasy.

Anant's (1967) study on twenty-six (25 males, 1 female) alcoholics treated individually (11 subjects) and in four groups (approximately 4 subjects each) with verbally induced aversion reported periods of abstinence ranging from eight to fifteen months on all patients completing treatment. One individual left treatment before completing all phases of it. No explanation was provided for this withdrawal. Anant does not mention whether or not booster conditioning sessions were carried out periodically with the subjects in the study. No control group was employed in this study.

Ashem and Donner (1968) reported the treatment of twenty-two male alcoholics with covert sensitization in a six-week program. Ashem and Donner employed three groups: a forward-conditioning group, a backward-conditioning group, and a non-contact control group. Subjects were matched in triplets on the basis of I. Q., age and drinking experience and were randomly assigned to treatment groups.

The criteria for selection of subjects in the study were: subjects at least average in intelligence (measured by Otis Intelligence Scale), forty-five years of age or less, free from any sign of gross psychological disturbance as assessed by the MMPI (F scale and psychotic scales, Pa, Sc, Md), an indication that a six-month follow-up would be obtainable, and voluntary entrance into the six-week course for treatment of alcoholism. In these findings Ashem and Donner noted 40 percent success

with subjects receiving covert sensitization. Two reservations need to be made regarding the analysis of these results: First, subjects on whom no follow-up could be made were assumed to be drinking: second, members of both forward and backward-conditioning groups were combined because the researchers reported subjects made rapid and automatic associations between the CS (alcohol) and the UCS (nausea) on subsequent presentations.

In recognizing the need for further investigation of any innovative procedure such as covert sensitization, Ashem and Donner suggested the need to investigate such variables as experience, sex of therapist, and ability of the subject to visualize and relax. While simultaneous investigation of all of these factors was beyond the scope of the study, attention was directed to the examination of sex of therapist as a significant variable in the employment of covert sensitization.

A further implication arising from the review of covert sensitization studies to date is the need for studies which compare various treatment approaches to the problem of alcoholism. Specifically, the objective of this study will be to compare and evaluate the effects of the problem-solving treatment normally used at Henwood with covert sensitization (behavior training) treatment.

Hypotheses Tested:

Hypothesis 1 — There is a significant difference in abstinence between a covert sensitization group and a problem-solving treatment group.

Hypothesis 2 — There is a significant difference in treatment effectiveness between female counselors employing covert sensitization with male subjects and that of male counselors employing covert sensitization with male subjects.

CHAPTER IV

Experimental Design and Procedure

The present chapter outlines the specific procedures followed in testing the hypotheses in Chapter III. The following are discussed: the institution, the sample and selection, the formation of groups, the counselors, the treatments, the instruments, the selection of a meaningful time period for follow-up, and the method and reliability of follow-up.

Institution

Henwood is a modern 64-bed residential unit for alcoholics, located seventeen miles northeast of the City of Edmonton. It provides accommodation for 50 men and 14 women.

Treatment services include individual and group therapy sessions, recreational and occupational activities, informational lectures, and subsequent discussion sessions about the development and progressive phases of alcoholism and the effects of alcohol on the physical and emotional health of the individual.

Those admitted to Henwood are individuals who have failed to respond to treatment in an out-patient clinic or other setting. Each case is dealt with according to need, and requests for admission are processed through out-patient clinics in Edmonton, Calgary, and Red Deer. All those admitted to Henwood enter the rehabilitation centre voluntarily; committal of individuals is not possible.

Referrals for detoxication are not accepted at Henwood. Individuals are required to present a medical certificate of reasonably good physical health before being accepted. A small infirmary, attended by a nursing staff and a part-time physician, provides for minor medical needs of the residents.

The Sample and Selection

All subjects were male volunteers admitted to the Henwood Rehabilitation Centre, Edmonton, Alberta, for the treatment of alcoholism. They were from all parts of the Province of Alberta, with a large proportion from Edmonton and Calgary. Individuals were either self-referred or referred by others, for example, by a physician. They ranged in age from 21 years to 56 years (median age — 43 years).

The original sample consisted of 35 subjects, 17 in the covert sensitization group and 18 in the problem-solving (regular Henwood) treatment group. With the exception of 3 subjects in the covert sensitization group and 4 subjects in the problem-solving group, all others in the project had received previous treatment for alcoholism.

It should be noted that it was not possible to randomly select subjects for the study, as a waiting list is not maintained at Henwood. Therefore, it was assumed that all subjects involved in the project were representative of the population of alcoholics.

TABLE II

SUMMARY OF TREATMENT GROUP SAMPLES BY AGE, NUMBER OF YEARS OF SUCCESSFULLY COMPLETED EDUCATIONAL TRAINING, NUMBER OF YEARS DRINKING A PROBLEM, AND EMPLOYMENT STATUS PRE-TREATMENT

Item	Group 1	Group 2
Subjects	15 males	17 males
Range of Ages	28-56 years	21-55 years
Median Age	47 years	42 years
Range of Years of Successfully Completed Educational Training	5-18 years	7-18 years
Median Years of Successfully Completed Educational Training	10 years	11 years
Range of Years Drinking a Problem	4-25 years	2-27 years
Median Years Drinking a Problem	15 years	18 years
Employment Status Pre-Treatment	5 employed 10 unemployed	7 employed 10 unemployed

Formation of Groups

For the purposes of the study two treatment groups were established: covert sensitization, designated as treatment group 1, and problem-solving, named as treatment group 2.

The treatment group 1 counselors were trained in covert sensitization, while the treatment group 2 counselors utilized the regular Henwood problem-solving approach. To minimize training bias, the counselors trained in covert sensitization also participated in treatment group 2 activities. However, none of the treatment group 2 counselors conducted covert sensitization since, as described above, they were not trained in this method.

The development of the assignment procedure for subjects to each of the two treatment groups was determined on the following basis: Regular intake procedures at Henwood results in individuals being assigned to one of three treatment groups. The assignment itself is based on practical considerations. For example, as individuals leave the treatment center, new arrivals are assigned to fill existing group vacancies. While it was not possible to exercise any control over this administrative function, the subjects who comprised the total sample were assigned to each of the two treatment groups in the following manner: The first subject was assigned to treatment group 1, the second subject to treatment group 2, the third subject to either group 1 or 2, the fourth subject to the alternative group, and so forth. It was assumed that each subject had an equal opportunity of being included

in either treatment group.

The assignment of counselors to subjects in the covert sensitization group followed a similar pattern in which male and female counselors were alternatively assigned to the group 1 subjects. Each counselor worked with at least two subjects of the covert sensitization group.

While it is desirable that a nontreatment control group be formed in experiments designed to determine the effects of different types of treatment, the inclusion of such a group in the present study was not possible. Henwood policy selects only those individuals who are currently experiencing problems with alcohol. All other persons are referred to out-patient clinics or day-care centres located in various parts of the province.

The Counselors

A total of 18 counselors (10 males, 8 females) comprised the entire treatment staff at Henwood. The counselors' age range was 22 to 52 years; all had previous counseling experience ranging from 1 to 10 years. The formal training and educational level attained by staff members ranged from grade 12 (1), to registered nurse (8), to bachelor's degree (9).

Prior to the initiation of the investigation the researcher outlined the proposed study to the entire staff complement, requested volunteers for counselor training and skill development in covert sensitization, and received the names of 10 volunteer members who agreed to participate in the study. Subsequently, these individuals were engaged in a two-week workshop, the format of which consisted of lecture,

discussion, practice, and evaluation sessions. Audio tape recordings and note taking were utilized during the workshop and throughout the actual study. Of the 10 who took part in the workshop, 8 counselors (4 males, 4 females) were employed two hours per day carrying out covert sensitization. In addition, these counselors contributed a minimum of one hour daily in the problem-solving treatment.

TABLE I II

SUMMARY OF COUNSELOR GROUPS BY SEX, AGE, YEARS OF EDUCATIONAL TRAINING BEYOND GRADE 11, AND YEARS OF COUNSELING EXPERIENCE

Item	Group 1	Group 2
Sex	4 males; 4 females	6 males; 4 females
Range of Ages	26-63 years	25-53 years
Median Age	35 years	28 years
Range in Years of Educational Training Beyond Grade 11	1-5 years	1-6 years
Median Years of Educational Training Beyond Grade 11	3 years	3. 5 years
Range in Years of Counseling Experience	1-10 years	1-5 years
Median Years of Counseling Experience	3 years	1. 5 years

Treatments

Subjects assigned to the covert sensitization group were treated individually; those assigned to the problem-solving group were treated in small groups of varying size with a counselor - subject ratio of one-to-two. All counselors understood that the criterion of success was to be abstinence.

The treatment schedule extended over a 20-day period with each group receiving a total of 40 treatment sessions of one hour's duration. With the exception of these sessions, subjects of both groups participated fully in the regular Henwood schedule of activities, e. g. lectures, recretional activities, and occupational therapy.

Covert Sensitization (Group 1) This treatment consisted of a slightly modified and systematic form of treatment advanced by Cautela (1966). Covert sensitization consisted of two main procedures — relaxation and aversive conditioning — to eliminate the drinking problem.

During the first treatment hour a maximum (of 10 minutes) was spent in exploring the subject's drinking problem and its background. Five to 10 minutes were spent in explaining the treatment rationale and plan. Each subject was told that he was unable to stop drinking in excess because drinking had become a strong learned habit which gave him a lot of pleasure. He was told the way to eliminate this faulty habit was to associate alcohol with an unpleasant stimulus. He was also told that anxiety and tension, which sometimes accompany the drinking behavior, would be treated. The next 10 to 15 minutes were expended in

the administration of the Alcohol Questionnaire (Appendix C), and assistance was provided to subjects who requested it. For the remaining 20 to 30 minutes, the subjects received training in progressive relaxation.

Paul's (1966) relaxation procedure consisted of alternating and releasing gross-muscle groups as a method of reducing anxieties and tensions that arise in daily experiences and situations. The subjects were told to focus attention on these muscles, moving progressively through the body and extremities until a state of deep relaxation was achieved. They were told to practice the relaxation procedure twice a day for no longer than 15 minutes.

The second through tenth sessions were conducted in the following manner. The first 5 to 10 minutes were spent in checking on the subject's success in relaxation practice and correcting any problems with procedures. Relaxation was induced by the counselor and during the last few minutes of the session the subject was aroused, and his reactions to the relaxation procedure were discussed.

Sessions 11 to 24 were taken up with aversive conditioning proper. The first 5 to 10 minutes of the eleventh session were spent in reviewing the subject's relaxation practices. This was followed by 20 to 30 minutes of preparation and construction of individual nauseous scenes pertaining to the subject's own experiences. The remaining 20 to 30 minutes consisted of nauseous scenes being presented to the fully relaxed subject. When the subject indicated (by raising the index finger of his right hand) that he was able to visualize the nauseous scene, he was instructed to stop imagining

the scene and to let it pass. Two to 3 minutes of uninterrupted relaxation followed the final scene presentation. The subject was aroused 5 to 10 minutes before the end of the session, and his reactions to the aversive conditioning were discussed. He was instructed to practice the same scenes at least twice on his own before the next session. Sessions 12 through 24 followed the same general pattern of the eleventh session. A maximum of 10 to 12 minutes was spent in checking aversive conditioning practice sessions and correcting difficulties. The remaining session time was taken up with further aversive conditioning, discussion of effects and assignment of homework.

The next phase of treatment, sessions 25 to 32, included the addition of turning-away (relief) material to the earlier nauseous scene presentations. In the twenty-fifth session, 5 to 10 minutes were used to review the assigned homework. The next 20 minutes consisted of the expansion of the previous scenes by including material which required the subject to imagine that he was actively turning away from the nauseous event, the effects of which culminated in a feeling of relief. Sessions 26 to 32 followed in like manner with the continued monitoring of the effects of external practice sessions before formal treatment began. The termination of the session included a discussion of treatment scene effects, followed by the assignment of two practice periods outside of the treatment hour.

Sessions 33 to 40, the last phase of treatment, consisted of new material being appended to the scenes already employed. At the

beginning of the thirty-third session, 5 to 10 minutes were taken up in reviewing the results of the out-of-treatment practice. The next 20 minutes pertained to the adding of new material which consisted of thoughts and feelings of well-being associated with sobriety. The remaining 20 to 30 minutes were taken up in scene presentations with the subject being asked to report his reactions. At least two outside practice periods were required of all subjects. Sessions 34 to 40 followed this same general procedure. The counselors were instructed to maintain a warm interest and helpful attitude throughout the entire treatment period.

TABLE IV

SUMMARY OF MAJOR TIME AND TECHNIQUE PARAMETERS WITHIN INDIVIDUAL COVERT SENSITIZATION*

Operation and Parameter

Relaxation training:

Within session time.....20-35 minutes

Total No. of sessions.....10

Muscle sequence.....Dominant (D) Hand and Forearm, D biceps, Non-Dominant (ND) Hand and Forearm;

ND biceps, Forehead, Nose, Mouth, Jaw, Chin and Throat, Abdomen, D upper leg, D calf, D foot, ND upper leg, ND calf, ND foot;

Duration of tension.....5 to 7 seconds

Duration of release.....10 to 20 seconds

Manner of release.....Abrupt

TABLE IV — Continued

No of tension release cycles.....2-4

Use of suggestion..... Indirect only

Other Features..... All muscle groups covered each session;

phase to large groups as skill acquired;

later by image alone;

Covert sensitization proper:

Within session time.....30-45 minutes

Total No. of sessions.....30

Session 11 to 24..... Aversive conditioning (nausea) relaxing

Session 25 to 32..... Aversive conditioning (nausea) turning away (relief) from alcohol and relaxing

Session 33 to 40..... Aversive conditioning (nausea) turning away (relief)- feelings of well-being and adequacy feelings associated with sobriety.

Scene presentations 3-7; Mean = 5

*The investigator wishes to acknowledge that the idea for this tabular presentation developed out of the work of Paul, G. L., reported in an article entitled, Outcome of Systematic Desensitization, in C. M. Franks (ed.), Behavior Therapy: Appraisal and Status, New York: McGraw-Hill Book Company, 1969.

Problem-Solving (Group 2) The problem-solving approach is characterized by the counselor attempting to help the subject gain insight into the nature of his drinking problem and its accompanying effects on himself and his relationship with others (Appendix B). Although some variations existed in this approach because of differences in counselor experience and training, all counselors agreed that greater self-insight of one's drinking behavior was an important treatment goal.

Other major treatment goals consisted of improvement in interpersonal relationships, the development of new relationships, the acquisition of greater trust in self as well as in others, and the development of skills in learning how to deal more constructively with personal feelings of guilt and hostility.

In accordance with these objectives, the group leader (counselor) provided initial structure in the small group setting (composed of 2 other counselors and approximately 6 subjects) by informing the individuals as to the nature and purpose of the group sessions. He also outlined his expectations of a group member's behavior during these meetings.

Individuals were placed in face-to-face contact groups and encouraged to verbally express "here and now" feelings, attitudes toward self, other group members, past experiences and the resultant consequences of excessive drinking behavior. All group members were introduced to each other, and the group leader attempted to involve the 'timid,

shy' member by asking innocuous questions of him.

Techniques such as clarification and interpretation of content, the reflection of the individual's behavior during the interaction periods as well as silences in the group were dealt with by the group leader. In addition, supplementary aids such as printed hand-outs, films, lecture material, and take recordings of group sessions were utilized to generate topics for discussion during subsequent treatment sessions.

The group leader periodically initiated role playing exercises to demonstrate alternate ways of coping with individual problems. While one group member participated in this activity, the other members were instructed by the leader to listen and observe the behavior taking place during the demonstration. They were also informed to note what thoughts and feelings they experienced in their role as observers. Upon completion of the exercise, all members were encouraged to verbalize what each had observed and what feelings each had experienced during its occurrence. In particular, they were asked to express what changes, if any, had taken place in their own attitudes about themselves and in their perception of their problems as the result of this experience.

Other kinds of "interaction" type exercises were engaged in by the group to enhance communication with each other. Throughout these exercises, the counselors present instructed the group members to confront each other whenever an occasion arose in which one member misunderstood what another was attempting to communicate and especially whenever one member disagreed with an idea (or ideas) expressed by any other group member.

The Instruments

The instruments utilized in the study were of two basic types — questionnaires and commercially produced standardized tests. Trained graduate students administered the standardized tests to the subjects of both treatment groups. Data were gathered on the variables of socio-economic status, intelligence and personality.

Since the nature and scope of the project were concerned primarily with the evaluation of treatment and outcome, no attempt was made to isolate variables that might be operating to accelerate excessive drinking (e.g. socio-economic status). It did appear to the investigator that such correlational data could serve as source material for further investigation.

The Cautela Alcohol Questionnaire

Description. The questionnaire by Cautela (1966) was designed to elicit information about an individual's excessive drinking behavior. It consists of 17 questions about such items as frequency, intensity, and duration of drinking behavior; types of alcoholic beverages preferred and most frequently consumed; most frequent place where drinking occurs; whether drinking is done alone or with others, such as wives, parents, relatives, friends; reasons for drinking and for wanting to stop.

The questionnaire was completed during the initial interview by all subjects who comprised the covert sensitization treatment group. If clarification on individual questions was sought, the counselors provided such assistance in accord with previously established instructions

set out in the covert sensitization treatment manual (p. 76).

Scoring. The questionnaire yields no numerical score. Its chief purpose was to provide realistic content for scene construction and use during covert sensitization treatment.

Follow-up Drinking Scale

Description. On the assumption that inconsistent findings of outcome studies on persons released from alcoholism treatment programs can be attributed to inadequate research orientation and methodological deficiencies, Boggs (1967) developed drinking scales to improve the measurement of the effects of alcoholism treatment programs. Using Guttman scaling techniques, he developed a drinking scale in which five items were identified and scored and applied to pre and post drinking patterns of persons who had participated in the evaluation of two different treatment programs.

The coefficient of reproducibility of the Boggs follow-up scale was .90, based on 100 cases out of a total sample of 241. Separate coefficients reported for both study (N= 67) and control (N= 33) cases were .91 and .94 respectively, indicating the validity of these five items in measuring drinking intensity.

This study used a slightly modified version of the scale used by Boggs for follow up interview purposes (Appendix F). Changes (substitutions of the terms "3 months" for "12 months", and "Henwood" for "unit") in the scale items were thought to be necessary in view of

the criterion measure used and for the identification of the treatment center in which the project occurred. Scoring procedures for the scale were left unchanged.

Scoring. Detailed answers were given to each of the five questions; however, for scoring purposes, the answer categories were dichotomized so that each item was given a score of 0 to 1. The possible range of scores was from 0 to 5 for each subject. Scores of 1 or above on the follow-up scale were considered as treatment failures.

Gough Home Index Scale

Description. Gough (1949) developed the Home Index Scale on the basis that socio-economic status is measured best by a combination of indices. This study used a slightly modified version of the scale employed by Gaugh. It consists of 18 items, is easy to administer and quick to score (see Appendix F).

Scoring. The Scale is scored by counting one score for every "yes" answer. The possible range of scores, therefore, is from 0 (lowest possible socio-economic status) to 18 (highest possible socio-economic status).

Reliability. Gough (1949) reported a test-retest reliability coefficient of .989 on a sample of 55 college students. A Kuder-Richardson coefficient of .74 on a sample of 252 high school students was also given.

Validity. Correlations with three other socio-economic scales based on the same college sample yielded coefficient values ranging from .65 to .88.

Otis Quick-Scoring Mental Ability Tests: New Edition

Reliability. A corrected split-half reliability coefficient of .88 was obtained on Form Em of the Gamma Test based on 489 college freshmen (Manual, 1954); corrected split-half reliability coefficients ranging from .89 (Grade 4) to .95 (Grade 9) were reported on Form Em of the Beta Test based on 465 pupils in Grades 4 to 9 (Manual, 1954).

Validity. The Manual (1954) reports a mean validity index, as determining content validity, of .50 for Forms Em and Fm of the Gamma Test; it gives a mean validity index of .45 for Forms Em and Fm of the Beta Test.

Maudsley Personality Inventory

Description. Eysenck (1959) describes the Maudsley Personality Inventory as "a rough-and-ready measure of two important personality dimensions: Neuroticism (N), or emotionality, and Extraversion (E), (p. 3)." The two traits are measured by 24 questions with a total testing time taking no longer than 10-12 minutes. The method of developing the inventory was factor analytic.

According to Eysenck "...neuroticism refers to the general emotional lability of a person, his emotional over-responsiveness, and his liability to break down under stress; extraversion refers to the outgoing uninhibited sociable proclivities of a person (p. 3)."

Scoring. Two transparent scoring keys are used separately for each of the two scales. If an encircled "Yes" or a "No" on the test

is covered by a printed "2" on the key, two points are counted toward the score on that particular scale. If a "?" has been encircled and covered by a printed "1" on the key, one point is counted toward the score on that particular scale. All other answers are disregarded.

Reliability. The Manual (1959) reports both split-half and Kuder-Richardson coefficients ranging from .75 to .85 for the Extraversion scale and between .85 and .90 for the Neuroticism scale for many samples. Retest reliabilities of .81 and .83 on E and N scales are reported on 100 cases.

Validity. Eysenck (1947, 1952, 1957) provides a considerable body of evidence of construct validity. Correlations with other inventories are numerous and impressive. For example, the Taylor Manifest Anxiety Scale (1953) correlates .77 with N and -.35 with E on 254 American students; the Cattell neuroticism and extraversion scales correlate .65 and .67 with the corresponding Maudsley scales, based on 134 neurotics (Manual, 1959).

The Selection of a Meaningful Time Period for Follow-Up

The time criterion established for the study was a 3-month period from the end of treatment to follow-up. Since the treatment period extended over a 28-day period and Henwood policy dictates a "no drinking" requirement during treatment, a 4-month period of abstinence could be realistically considered as a final criterion time measure. Past investigations have used a minimum of 6 months to

one-year time interval. However, these studies also emphasized the numerous difficulties in trying to locate subjects after treatment. Previous studies by the Alberta Division of Alcoholism show strong evidence that the number of former individuals contacted following treatment is inversely related to the lapsed time of the study. Thus, the loss of valuable data increases with the length of time between treatment and follow-up. In an attempt to minimize the problem, a 3-month period of abstinence was chosen. Indirect support for this choice is provided by Davies, Shephered and Myers (1956) whose monthly follow-up of 50 alcoholics over a two-year period showed 90 percent of those who resumed drinking did so within 6 months and nearly all within 3 months. Further, Franks (1969) stated that the length of time between treatment and follow-up should be dictated by the likelihood or relapse as determined from pre-treatment stability of the distressing behavior (p. 42). In the total sample of 35 subjects, only 2 reported not drinking for a period greater than one month prior to treatment initiations.

The Method and Reliability of Follow-Up

A multi-dimensional approach was adopted by the investigator in carrying out this stage of the study. Past investigations revealed the absolute necessity of diverse techniques in gathering data as well as ensuring a high degree of validity and reliability in the information gathered.

The prime method followed consisted of a personal interview

with subjects of both groups who could be located and who consented to meet with the investigator. Corroborative data were elicited from spouses, acquaintances, Division of Alcoholism personnel, and employers. No attempt was made to collect data on any individual who, prior to his departure from Henwood, refused to grant his permission for this aspect of the study. One such person refused to do so. In the investigator's judgment, reliable data were obtained and verified on all other subjects.

CHAPTER V

Statistical Treatment and Results

This chapter provides evidence for the acceptance or rejection of the research hypotheses by the utilization of appropriate statistical procedures.

Information is also presented on the exclusion of one variable the investigator had hoped to test out and on the removal of subjects from the sample.

Rejection of Variable

The investigator had hoped to test the significance of visualization previously cited by Ashem and Donner (1968) as a variable in the covert sensitization procedure. Pre and post tests of visual imagery were constructed (Appendix E).

The tests consisted of 10 nouns which subjects were asked to rate on a seven-point, low imagery-high imagery scale. The administration of the pre-test to in-coming persons yielded very high visualizer scores for all but one individual. A retest later yielded a high visualizer score for this one person. Because scores were at or close to the ceiling of the pre-test, it was evident that variance reported by Pavio, Yuille, and Madigan (1968) was very dissimilar to variance in the present sample, and since post-test results showed similar high or ceiling scores, a comparison of pre- and post-test scores

would be meaningless. Thus, the variable of visualization was excluded from the study.

The following factors may have led to the result:

(1) subject's misunderstanding of the task;

(2) subject's desire to present himself in a favorable light as able to visualize very well;

(3) investigator's inability to be present to administer the test(s) since referrals arrived at unscheduled hours of the day and early evening;

(4) test was not appropriate for the population from which the sample was drawn.

Removal of Subjects

Two persons were excluded from the covert sensitization group for the following reasons: One person was extremely depressed and withdrawn and required psychiatric assistance during his stay at Henwood; the other left Henwood for personal reasons ten days after he began treatment.

One person in the second treatment group was excluded from the sample because of refusal to co-operate in any phase of the study.

Thus, the original sample of 35 subjects was reduced to 32. Treatment group 1 consisted of 15 subjects; treatment group 2 consisted of 17 subjects.

Hypothesis 1 stated:

"There is a significant difference in abstinence between a covert sensitization group and a problem-solving treatment group."

TABLE V

SUMMARY OF TREATMENT RESULTS SHOWING THE PROPORTION OF ABSTINENT AND DRINKING SUBJECTS FOR EACH TREATMENT GROUP

Group	Abstinent	Drinking	Total
1	6 (.40)	9 (.60)	15
2	5 (.29)	12 (.71)	17
	11	21	32

To test the Hypothesis 1, a z-test of the significance of the difference between two independent proportions was used (Ferguson, 1966, p. 177). This z-value has an associated (directional) probability of $p < .26$. As such, a conclusion regarding the superiority of the covert sensitization treatment group is not warranted .

Hypothesis 2 stated:

"There is a significant difference between female counselors employing covert sensitization with male subjects and that of male counselors employing covert sensitization with male subjects."

Hypothesis 2 was tested in a similar fashion. This z-value has a directional probability of $p = .2$. Again a conclusion regarding the superiority of female counselors with male alcoholics must await further evidence.

TABLE VI

SUMMARY OF TREATMENT RESULTS SHOWING THE PROPORTION OF ABSTINENCE AND DRINKING SUBJECTS FOR MALE AND FEMALE (COVERT SENSITIZATION) COUNSELORS

Sex of Counselor	Abstinence	Drinking	Total
M	2 (.29)	5 (.71)	7
F	4 (.50)	4 (.50)	8
	6	9	15

Conclusions

1. Hypothesis 1 specified that treatment one would be superior to treatment two. Results indicate that although a slightly larger proportion of treatment one subjects abstained for at least three months than did treatment two subjects, a difference of this small magnitude could be expected approximately 25 times out of 100 by chance alone, and the finding did not approach statistical significance.

2. Hypothesis 2 stated there would be a significant difference in treatment effectiveness between male and female counselors employing covert sensitization with male alcoholics. The statistical evidence suggests that although a slightly larger proportion of female counselors working with male subjects were more successful, this difference could be expected approximately 20 times out of 100 by chance alone, and the finding did not approach statistical significance.

CHAPTER VI

Discussion and Recommendations

The concluding chapter of this study consists of a discussion of the results of this experiment with particular reference to some implications arising out of the utilization of covert sensitization with alcoholics. Also, a final section on recommendations for further research has been included.

Discussion of the Results

As the findings of this study indicate, support for the utilization of a conditioning therapy in the successful treatment of alcoholism has not been obtained. Since covert sensitization is a type of aversive conditioning, several issues of a theoretical and practical nature pertaining to the effectiveness of its use need to be considered. Theoretically, aversive conditioning, like all other types of conditioning, will eventually extinguish unless periodic reinforcement of the conditioned responses occurs. Most investigators agree that alcoholism is an acquired habit that has undergone countless reinforcements over a period of months and years. Continuous treatment for the alcoholic over an extended period of time is of fundamental importance in the successful treatment of this problem. The significance of this factor in the present study received added support from the information gathered during follow-up interviews with non-abstinent subjects who had received

covert sensitization during their stay at Henwood. Of the nine individuals who resumed excessive drinking during the follow-up interval, all except two did so at least six weeks after treatment had terminated.

A further theoretical issue suggests that if neurotic behavior (alcoholism) is motivated by fear or anxiety, aversive conditioning can augment rather than reduce such behavior. No evidence of this was found to occur in the information gathered at the time of the 3-month follow-up. On the contrary, comments from abstinent covert-sensitization subjects suggest the exact opposite. "...I have no urge to drink anymore." "I feel more relaxed now than I ever did before at any time in my life...."

A problem of practical importance was reported by some patients during the aversive phase of the covert sensitization procedure. Some patients expressed difficulty in imagining nauseous after-effects due to the drinking of alcohol. More noxious stimuli were added to the scenes in an attempt to overcome this difficulty, and write-ups of interviews by counselors indicated that all subjects did exhibit appropriate overt behavior at some time during this phase of treatment. However, it would appear that this variable needs continued research and exploration.

One notable feature of covert sensitization concerns the degree of control individuals have over their own behavior. In this experiment all subjects were required to carry out practice sessions on their own after treatment sessions had terminated. While this aspect of treatment resulted in little resistance during their stay at Henwwod, subsequent

follow-up interviews revealed six of the nine non-abstinent subjects had not carried out any practice sessions, while three did so only sporadically during the first month after treatment. Among the six abstinent subjects, four reported bi-weekly practice on their own, the remaining two reported making use of it whenever they felt the need arise. In general, comments from persons employing practice sessions on their own suggests difficulties in achieving the degree and level of effect they experienced during their treatment session at Henwood. This finding suggests the need for periodic assessment by counselors to ensure that appropriate utilization of covert sensitization procedures takes place.

In retrospect, it appears to the investigator that choice of criterion for treatment outcome in this study was unnecessarily restrictive. While the major objective of treatment should be to modify the target behavior for which clients seek help, it would seem that in the treatment of such a severe disorder as alcoholism, which has unfavorable effects on occupational, marital, social, and other areas of functioning, treatment could be best evaluated in terms of its total consequences. For example, the employment status of individuals in this study reflected the following pre-post treatment pattern:

TABLE VII

SUMMARY OF SUBJECTS EMPLOYED AT PRE AND POST TREATMENT FOR EACH GROUP

Group	Pre	Post
1 ($n_1 = 15$)	5	12
2 ($n_2 = 17$)	7	12

A visual analysis of this data suggests secondary gains made by persons of both groups and lends support to the value of employing multiple outcomes in addition to the assessment of drinking behavior itself.

Direct support for this notion is provided from the results of Pokorny, Miller, and Cleveland's (1967) one-year follow-up study on 88 alcoholics. A definite positive correlation between improvement in drinking and improvement in other adjustment areas such as employment, social relationships with others was reported, as well as feelings toward self. This finding suggests evidence which runs counter to another notion that correction of drinking leads to increased maladjustment in other areas.

Recommendations for Further Research

1. The results obtained in the present study suggest covert sensitization can be effective in the treatment of alcoholism. Since the size of the sample employed in this study was small, further research should be undertaken to determine its immediate and long-term effectiveness with larger samples.

2. Further investigation and experimentation with covert sensitization should include the provision of periodic "booster" sessions after discharge. This might be accomplished by providing a bi-monthly treatment session during the first month after discharge with subsequent monthly treatment sessions conducted during the first six months following in-patient treatment.

3. The development of a manual including the instructions, exercises, and covert sensitization scenes found effective during treatment would enable discharged persons to have suitable and available reference material for homework practice.

4. Because visual imagery is a central component of covert sensitization, further research should include the development of a reliable and valid instrument of a person's ability to visualize. Special imagery training sessions could be provided to those who appear to lack sufficient development in this skill. Also, this could be conducted in conjunction with the treatment sessions.

5. Further investigation of treatment effectiveness between male and female counselors employing covert sensitization should be undertaken. It would be advisable to work with a larger number of subjects than was possible in the present endeavor.

6. It would be valuable to explore the application of covert sensitization in small groups of 3 or 4 subjects. There is no evidence to suggest that this approach would be less effective or not feasible in the treatment setting. Perhaps in groups, individuals could get more support from each other. Also, one could consider having the small groups meet following discharge. This might be a way of overcoming the problem observed of people not practicing.

7. It would be advantageous if a more adequate preparation of counselors employing covert sensitization in groups was undertaken than was possible in the present study. Such matters as withdrawals,

and other problems arising out of the use of covert sensitization could be more ably attended to and avoided in subsequent treatment sessions with individuals.

8. Finally, further investigation employing covert sensitization should include the development of reliable indices to record significant pre- and post-treatment information. Such items as amount of alcohol consumed during a drinking episode, the type of behavior exhibited by the individual before, during, and after drinking excessively, and the effects of the individual's drinking behavior on his marital, social, or occupational relationships could provide useful correlates to an arbitrary abstinence criterion.

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APPENDIX A

APPENDIX A

Covert Sensitization

Counselor Manual

APPENDIX A

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Background to problem.

Alcoholism is a recognized social, economic and therapeutic problem which has captured the attention of countless therapists, research workers and theorists. A review of the recent literature suggests two commonalities. First, there is at present no general agreement as to the etiology, dynamics and treatment of alcoholism (Franks, 1958, 1963). Second, the inherent weaknesses in the majority of the experiments reported as such that the findings are often difficult to interpret and highly limited in their value (Hill and Blane, 1967, 1967a).

In the last ten years there has been an accelerated interest in the application of the principles of behavioristic learning theory to the understanding and modification of behavior in general (Eysenck, 1960, 1964; Ullman and Krasner, 1965; Krasner and Ullman, 1965; Rachman, 1963; Lovibond, 1966; Grossberg, 1964) and to the treatment of alcoholism in particular (Eysenck and Rachman, 1965; Franks, 1963, 1964, 1966). One such promising conditioning approach toward the treatment of maladaptive behavior as obsession, compulsion, homosexuality, drinking, and stealing has been advanced by Cautela (1966, 1967). This procedure, labelled "covert sensitization" makes use of covert or imagined stimuli for both the conditioned stimulus and the unconditioned stimulus, i. e., no external aversive stimuli is presented.

Explanation of Solution.

Covert sensitization appears to be successful in the modification of maladaptive approach behavior (Stuart, 1967; Barlow, et al., 1968;

Davison, 1968). In this procedure the individual is asked to imagine an aversive situation as soon as he has thought of drinking or is about to drink; this is a punishment procedure. An aversive stimulus is made to follow the response to be reduced. Evidence indicates that punishment is quite effective in reducing the frequency of responses and that this reduction can be long-lasting or permanent (Kushner and Sandler, 1966). Certain conditions should be carefully arranged to produce a decrease in response frequency. The noxious stimulus should be contiguous with that response. The response should have a history of positive reinforcement (e. g. drinking). The aversive stimulus should be presented on a continuous basis, at least initially, after which a partial schedule can be presented.

Since the patient is usually told that the nausea and vomiting behavior decreases and he feels better as soon as he turns away from the undesirable object (beer, wine, whiskey) this is analogous to an escape procedure which occurs when a particular behavior terminates the presentation of a noxious stimulus. Eventually, avoidance behavior occurs, as evidenced by the fact that patients report they no longer have the urge or the temptation for the particular stimulus. The cues which have been previously associated with the noxious stimulation of nausea and vomiting now have become discriminatory stimuli for avoidance behavior (Hall, 1966).

Explanation of rationale and treatment process.

It is important that the patient understand and accept the treatment

process; his full co-operation will be needed. A brief explanation of the theory and treatment process should be given and repeated if questions arise. It should be pointed out that excessive drinking is the result of learning and that the treatment process will be a learning process. Further brief explanations should be provided if doubts or questions still arise from the patient.

Specifically, the patient is told that he is unable to stop drinking in excess because drinking has become a strong learned habit which gives him a great amount of pleasure. He is told that the way to eliminate this faulty habit is to associate alcohol with an unpleasant stimulus. He is further told that it is usually necessary to treat the drive or anxiety component that accompanies the maladaptive behavior as well as the behavior itself. The following brief explanation should suffice for an introduction to the treatment process. (Adherence to the exact wording is not necessary).

First interview in detail.

"The specific treatment we will be using is called covert sensitization. It consists of two main procedures — relaxation and aversive conditioning — to eliminate your drinking problem. The relaxation procedure is based upon the results and work of Dr. Jacobson who developed this method in the nineteen-thirties. Jacobson's method of induced relaxation can be learned quickly and provides most individuals with a method of reducing anxieties and tensions that arise in daily experiences and situations. Simply put, the relaxation technique permits relaxation

of the muscle system in your body and because of this you cannot be both tensed and relaxed at the same time. I will be asking you to practice relaxation between our meetings. We will work out a practice schedule together as we go along in treatment."

"The second procedure, aversive conditioning, will be an attempt to condition an aversive reaction to alcohol by means of inducing the response of nausea. Shortly, I will be asking you to complete a questionnaire which will provide information related to the history of your drinking problem, i.e., when and how you started drinking, what types of drinks you prefer, where you usually drink and whether you drink alone or with other people. During our meetings I will be describing scenes to you composed of this information, and I will be asking you to imagine these scenes as vividly as you can. In brief, your drinking behavior will become associated with avoidance (turning away) and rejection of alcohol drinking and feelings of well-being associated with sobriety. As before, I will be asking you to practice scenes between our sessions, and we will plan together a practice schedule suitable to you."

"These procedures have been used before with excellent results. They will become much clearer after we begin using them. Do you have any questions on what we have already discussed?"

You should then proceed to administer the questionnaire. If the patient requires assistance with it, offer your help to him.

Finally, proceed with the first lesson in relaxation and at the termination of this, assign relaxation practice (homework) for the patient to carry out on his own.

First Interview

1. Discussion of problem and its background.
2. Explanation of treatment.
3. Administration of questionnaire.
4. Relaxation training; first lesson.
5. Assignment of relaxation practice; homework.

Second Interview

1. Check on relaxation practice and progress of patient.
2. Relaxation training; second lesson.
3. Assign relaxation practice for homework.

Interviews Three through Five

1. Continue to check on relaxation practice and progress of patient.
2. Continue relaxation training lessons.
3. Continue to assign relaxation practice for homework.

Sixth Interview

1. Check on relaxation practice and progress of patient.
2. Begin aversive conditioning (nausea) and relaxing.
3. Assign aversive conditioning practice for homework.

Interviews Seven through Twelve

1. Continue to check on patient's practice and progress in aversive conditioning (nausea) and relaxing.
2. Continue aversive conditioning (nausea) and relaxing.
3. Continue to assign aversive conditioning (nausea) practice and relaxing.

Thirteenth Interview

1. Check on homework and progress of patient.

2. Continue aversive conditioning (nausea) and add turning away (relief) from alcohol and relaxing.

3. Assign homework.

Interviews Fourteen through Sixteen

1. Continue to check on patient's practice and progress in aversive conditioning (nausea) — turning away (relief) and relaxing.

2. Continue aversive conditioning (nausea) — turning away (relief) and relaxing.

3. Continue to assign homework; practice sessions.

Seventeenth Interview

1. Check homework and progress of patient.

2. Continue aversive conditioning (nausea) — turning away (relief) and relaxing.

3. Add feelings of well-being and adequacy associated with sobriety to turning away (relief).

Interviews Eighteen through Twenty.

1. Continue to check on patient's practice and progress.

2. Continue aversive conditioning (nausea) — turning away (relief) with feelings of well-being and adequacy associated with sobriety.

3. Complete check on patient's practice and progress on homework.

Relaxation Training

Paul (1966) describes relaxation training as follows:

Training in progressive relaxation.

This is a most important procedure, and one that should be mastered. It should be explained to the subject that this technique will take some time (20-35 minutes) at first, but as he learns, the time for inducing deep relaxation will be shortened. Training begins by having the subject systematically tense his gross-muscle systems, holding them tense until you say "relax", at which time the subject lets go immediately. If the muscles are first tensed, they will relax more deeply when they are released. Also explain that you want the subject to focus all his attention on each muscle system as you work through the various groups, so that after practice he will not have to tense the muscles first in order to achieve deep relaxation.

The Method.

Seat the subject in an over-stuffed chair, with the therapist sitting slightly to one side. Legs should be extended, head resting on the back of the chair, and arms resting on the arms of the chair. No part of the body should require the use of muscles for support. Have the subject close his eyes to minimize external stimulation. The room should be quiet and lights dimmed if possible.

1. Instruct the subject to "make a fist with your dominant hand (usually right). Make a fist and tense the muscles of your (right) hand and forearm; tense until it trembles. Feel the muscles pull across your fingers and the lower part of your forearm." Have the subject hold this position for 5 to 7 seconds, then say "relax", instructing him to just let his hand go: "Pay attention to the muscles of your (right) hand and forearm as they relax. Note how those muscles feel as relaxation flows through them." (10-20 seconds). "Again, tense the muscles of your (right) hand and forearm. Pay attention to the muscles involved (5-7 seconds)." "O. K., relax; attend only those muscles, and note how they feel as the relaxation takes place, becoming more and more relaxed, more relaxed than ever before. Each time we do this you'll relax even more until your arm and hand are completely relaxed with no tension at all, warm and relaxed."
Continue until subject reports his (right) hand and forearm are completely relaxed with no tension (usually 2-4 times is sufficient).

2. Instruct the subject to tense his (right) biceps, leaving his hand and forearm on the chair. Proceed in the same manner as above, in a "hypnotic monotone," using the (right) hand as a reference point, that is, move on when the subject reports his biceps feels as completely relaxed as his hand and forearm. Proceed to other gross-muscle groups (listed below) in the same manner, with the same verbalization. For example: "Note how these muscles feel as they relax; feel the relaxation and warmth flow through these muscles; pay attention to these muscles so that later you can relax them again." Always use the preceding group as a reference for moving on.

3. Nondominant (left) hand and forearm--feel muscles over knuckles and on lower part of arm.

4. Nondominant (left) biceps.

5. Frown hard, tense muscles of forehead and top of head. (These muscles often "tingle" as they relax.)

6. Wrinkle nose, feeling muscles across top of cheeks and upper lip.

7. Draw corners of mouth back, feeling jaw muscles and cheeks.

8. Tighten chin and throat muscles, feeling two muscles in front of throat.

9. Tighten chest muscles and muscles across back--feel muscles pull below shoulder blades.

10. Tighten abdominal muscles--make abdomen hard.

11. Tighten muscles of right upper leg--feel one muscle on top and two on the bottom of the upper leg.

12. Tighten right calf--feel muscles on bottom of right calf.

13. Push down with toes and arch right foot--feel pressure as if something were pushing up under the arch.

14. Left upper leg.

15. Left calf.

16. Left foot.

For most muscle groups, two presentations will suffice. Ask the subject if he feels any tension anywhere in his body. If he does, go back and repeat the tension-release cycle for that muscle group. It is often helpful to instruct the subject to take a deep breath and hold it while tensing muscles, and to let it go while releasing. Should any muscle group not respond after four trials, move on and return to it later. (Caution:) some subject may develop muscle cramps or spasms from prolonged tension of muscles. If this occurs, shorten the tension interval a few seconds, and instruct the subject not to tense his muscles quite so hard.

Although the word "hypnosis" is not to be used, progressive relaxation, properly executed, does seem to resemble a light hypnotic-trance state, with the subject more susceptible to suggestion. Relaxation may be further deepened by repetition of suggestions of warmth, relaxation, etc. Some subjects may actually report sensations of disassociation from their bodies. This is complete relaxation and is to be expected. Subjects should be instructed to speak as little as possible while under relaxation.

In bringing subjects back to "normal", the numerical method of trance termination should be used: "I'm going to count from one to four. On the count of one, start moving your legs; two, your fingers and hands; three, your head; and four, open your eyes and sit up. One--move your legs; two--now your fingers and hands; three--move your head around; four--open your eyes and sit up." Always check to see that the subject feels well, alert, etc., before leaving.

The subject should be instructed to practice relaxation twice a day between sessions. He should not work at it more than 15 minutes at a time, and should not practice twice within any three-hour period. He should also practice alone. Relaxation may be used to get to sleep if practiced while horizontal; if the subject does not wish to sleep, he should practice sitting up. Properly timed, relaxation can be used for a "second wind" during study.

By the third session, if the subject has been practicing well, relaxation may be induced by merely focusing attention on the muscle groups, and instructing the subject to "concentrate on muscles becoming relaxed, warm," etc. However, if any subject has difficulty following straight suggestions, return to the use of tension-release. (Paul, 1966, pp. 118-120).

Description of Covert Sensitization Procedure.

The patient is taught to relax in the same manner as used in the desensitization procedure (Wolpe, 1958, pp. 139-155). He is asked to raise his index finger when he can relax completely without any tension. This usually takes no more than three or four sessions. When the patient is able to relax completely, he is told that he is unable to stop drinking in excess (or eating, or whatever is the problem to be treated) because it is a strong learned habit which now gives him a great amount of pleasure. He is also told that the way to eliminate his problem is to associate the pleasurable object with an unpleasant stimulus. The patient is then asked (while relaxed with his eyes closed) to very clearly visualize the pleasurable object (e.g., food, liquor, homosexual). When he can do this, he is told to raise his index finger. After he signals, he is told to next visualize that he is about to take the object (commit the compulsive act). If the object is liquor, for instance, he is asked to visualize himself looking at the glass with the alcoholic beverage in it. Then he is to visualize a sequence of events —holding the glass in his hand, bringing it up to his lips, having the glass touch his lips. When he imagines this latter scene, he is told to imagine that he begins to feel sick to his stomach. In imagination, he begins to vomit. The vomit goes all over the floor, the drink, his companions, himself —any aspect of his particular drinking situation. He is then asked to visualize the whole scene by himself,

and to raise his finger when he can picture it and actually feel nauseous when he has the intention of drinking, gradually getting sicker as he touches the glass, raises it, etc.

A feeling of relief is provided in scenes when he abstains from the pleasurable object. He is told to imagine that as he rushes outside into the fresh, clean air, or home to a clean, invigorating shower, or whenever he is tempted to drink and refuses to do it, the feeling of nausea goes away, and he no longer feels ill.

After several practice trials in the therapist's office, the patient is instructed to continue treatment on his own by means of "Homework" assignments which are 10-20 repeats of the office trials twice a day. He is also carefully instructed to immediately imagine that he has just vomited on his drink whenever he is tempted to drink, or about to order one, or about to ingest it. Patients report that treatment is quite effective whenever it is followed through conscientiously. As therapy continues, the use of this procedure as a self-control technique usually continues, and the patients are usually able to monitor their behavior very well. It is important to note that when anxiety is an essential part of the maladaptive response, desensitization is also utilized.

Treatment of Alcoholic Problems.

Besides the usual brief history taken in all behavior therapy cases, special attention is paid to certain characteristics of the client's drinking behavior. With the use of a specially constructed questionnaire and interviews, the following factors are determined.

1. History of the drinking problem.

2. Frequency of present drinking behavior.

3. Where "S" usually does his drinking.

4. What "S" drinks.

5. Antecedent conditions that are followed by drinking behavior.

A client may, for example, do most of his drinking in a barroom and may usually drink straight whiskey and sometimes beer. The covert sensitization sessions will then consist of scenes in which the client is about to drink whiskey in a barroom. If he drinks alone at home, scenes concerning the home will also have to be included. Essentially, we try to cover all the applicable kinds of drinking and all the places where the particular drinking behavior occurs.

A practical problem still exists concerning whether to proceed first with the kind of drinking he does most often in the most usual situations or to begin covert sensitization with the type of drinking and its situations which occur the least often. For the most part, I have used the first method. The primary advantage of the second method, however, is the provision of some measure of success since it involves the least amount of habit strength and will make the client more eager to continue treatment. A description of the procedure is as follows:

> YOU ARE WALKING INTO A BAR. YOU DECIDE TO HAVE A GLASS OF BEER. YOU ARE NOW WALKING TOWARD THE BAR. AS YOU ARE APPROACHING THE BAR, YOU HAVE A FUNNY FEELING IN THE PIT OF YOUR STOMACH. YOUR STOMACH FEELS ALL QUEASY AND NAUSEOUS. SOME LIQUID COMES UP YOUR THROAT AND IT IS VERY

SOUR. YOU TRY TO SWALLOW IT BACK DOWN. BUT AS YOU DO THIS, FOOD PARTICLES START COMING UP YOUR THROAT TO YOUR MOUTH. YOU ARE NOW REACHING THE BAR AND YOU ORDER A BEER. AS THE BARTENDER IS POURING THE BEER, PUKE COMES UP INTO YOUR MOUTH. YOU TRY TO KEEP YOUR MOUTH CLOSED AND SWALLOW IT DOWN. YOU REACH FOR THE GLASS OF BEER TO WASH IT DOWN. AS SOON AS THE GLASS TOUCHES YOUR HAND, YOU CAN'T HOLD IT DOWN ANY LONGER. YOU HAVE TO OPEN YOUR MOUTH AND YOU PUKE. IT GOES ALL OVER YOUR HAND, ALL OVER THE GLASS AND THE BEER. YOU CAN SEE IT FLOATING AROUND IN THE BEER. SNOTS AND MUCUS COME OUT OF YOUR NOSE. YOUR SHIRT AND PANTS ARE ALL FULL OF VOMIT. THE BARTENDER HAS SOME ON HIS SHIRT. YOU NOTICE PEOPLE LOOKING AT YOU. YOU GET SICK AGAIN AND YOU VOMIT SOME MORE AND MORE. YOU TURN AWAY FROM THE BEER AND IMMEDIATELY YOU START TO FEEL BETTER. AS YOU RUN OUT OF THE BARROOM YOU START TO FEEL BETTER AND BETTER. WHEN YOU GET OUT INTO CLEAN, FRESH AIR YOU FEEL WONDERFUL. YOU GO HOME AND CLEAN YOURSELF UP.

An important characteristic of the covert sensitization procedure is that its effects are very specific. If one treats for aversion to beer, there will be very little generalization to wine and whiskey. Avoidance to wine and whiskey must be treated separately. Sometimes I combine a covert sensitization trial for wine, beer, and whiskey by having the client see a glass of wine, a glass of beer, and a glass of whiskey on a table. As in the manner described above, he is told that he is sick and he vomits over all three beverages. (Cautela, 1967, pp. 459-462)

Illustration of Covert Sensitization with Alcoholics.

Forward Classical Conditioning Group. Following initial relaxation, and while the S was in a relaxed position upon a cot, he was presented with a series of drinking scenes, one at a time. He was told to imagine the scene as if it was happening at that moment. The following example is typical of the scenes used:

> "YOU HAVE JUST GOTTEN HOME FROM WORK. YOU ARE SITTING IN YOUR EASY CHAIR IN THE LIVING ROOM. THE TV IS BLARING OUT THE NEWS: THERE IS A CAN OF BEER ON THE END TABLE NEXT TO YOU. YOU CAN SEE THE BEER: YOU ARE REACHING FOR IT NOW. YOU HAVE IT IN YOUR HAND AND YOU'RE OPENING IT. YOU WANT A DRINK VERY MUCH. YOU ARE RAISING IT TO YOUR MOUTH: YOU CAN ALMOST TASTE IT ALREADY. IT IS AGAINST YOUR LIPS. YOU ARE DRINKING IT NOW."

Immediately after the S had signaled experiencing the taste of alcohol, the aversive stimulus was presented. The S was told that he felt extremely uncomfortable.

> "THE BEER IS WARM: YOUR STOMACH FEELS QUEASY. THERE IS A HEAVINESS IN YOUR THROAT. YOU ARE BEGINNING TO FEEL VERY SICK. YOUR LAST MEAL IS BEGINNING TO TURN OVER IN YOUR STOMACH. THE BEER IS BEGINNING TO COME UP. YOU BEGIN TO GAG. YOU CAN'T CONTROL YOUR GAGGING. YOU FEEL THE UNDIGESTED FOOD COMING UP: YOU ARE VERY NAUSEOUS. THE FOOD IS IN YOUR MOUTH: YOU CAN FEEL IT FORCING ITS WAY OUT OF YOUR MOUTH. YOU CAN NO LONGER KEEP IT DOWN. YOU ARE VOMITING OVER YOUR BEER--INTO YOUR BEER--OVER YOUR SHIRT. IT IS DISGUSTING: THE SMELL IS FOUL. YOU CAN't STOP."

Following this the S was told to stop imagining the scene and let it pass. (Relax)

During the initial training period the S's varied in their ability to visualize the stimulus. As imaginal ability increased, it became unnecessary to evoke the more remote associations to vomiting. In the event that vomit was not experienced as nauseous, or adaptation to its effects occurred, other stimuli reported as repugnant or fear-provoking, as seeing a dead soldier, incurring a brain injury, and so forth, were used in subsequent sessions.

As treatment sessions progressed, alternate responses to drinking became associated with relaxation. At first the S was merely relaxed at the end of the aversive conditioning session and told to associate pleasant thoughts with relaxation. Later relaxation was made contingent upon a visual image of pushing the alcohol away, taking a nonalcoholic drink, and finally, behavior and performance incompatible with drinking, such as going to A. A., performing some desired positive task, and so forth. Feelings of adequacy and well-being were also associated with being relaxed and the performance of the above alternate responses. (Ashem and Donner, 1968, p. 10)

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APPENDIX B

APPENDIX B

Henwood Group Therapy

Since the Division of Alcoholism has not as yet developed a treatment manual devoted to rationale, process and procedure(s) employed by counselors during group therapy sessions at Henwood, the investigator devised the following information for the purposes of this study.

In preparing this statement, three meetings were held with Henwood personnel who provided verbal and written comments pertaining to treatment goals, methods, and techniques. In order to determine whether or not this information represented a valid description of events and procedures, the researcher submitted the following information to Mr. L. Blumenthal, Clinical Director, Henwood for his examination, review, and final approval:

Goals:

Getting with people

Enhancing communication

Self-insight

Insight into others — Awareness

Relationships:

Trust — Self and others

Alleviate guilt

Forming new relationships in the group, broadening interests

Hostility

General:

To put an individual back into society, almost comfortable, more aware, more able-to-cope type of person.

APPENDIX B
Henwood Group Therapy (Continued)

General: (continued)

Henwood groups give one a chance to explore one's feelings, specifically in relationship to others in the group.

Groups based on here and now, stressing interaction and socialization versus "depth" therapy.

Relating.

Breaking down defenses.

Description:

Henwood counselors adopt an interaction, problem-solving approach in therapy sessions. The preparation and training of counselors consists of a week-long, orientation and familiarization session — a regular procedure for all new staff members to the Division of Alcoholism. No counselors have had formal training in group theory, methodology, or application, so the acquisition of knowledge, techniques and skills have, for the most part, been acquired during their hours of employment at Henwood. In-service training in group therapy techniques and skills is conducted periodically at Henwood. Approximately ten counselors have initiated self-improvement programs regarding their qualifications and training by enrolling in evening courses at the University of Alberta, Edmonton, Alberta.

APPENDIX B
Henwood Group Therapy (Continued)

There are 3 major groups or teams (the term "group" will be used henceforth). Each group consists of 2 leaders and 3 other counselors with approximately 12 subjects in each group. Throughout the 20-day treatment period a group may, at times, be further subdivided providing a revised makeup of 1 leader and 2 counselors with 6 subjects in each group.

In accordance with the treatment objectives previously outlined, group leaders provide initial structure by informing individuals as to the nature and purpose of group sessions as well as outlining leader expectations. Individuals are placed in face-to-face contact groups for the expressed purpose of providing them with the opportunity of "getting with people." Group members are introduced to each other and group leaders attempt to involve the 'timid, shy' members by asking innocuous questions of them.

In striving for the "enhancement of communication" among group members, group leaders encourage subjects to give expression to their feelings, attitudes toward self, other group members, their past experiences, and consequences of their drinking behavior. Supplementary aids such as printed hand-outs, film and lecture material, and tape recordings of their own group sessions are used to generate and structure discussion during subsequent treatment sessions. Techniques such as clarification and interpretation of content,

APPENDIX B
Henwood Group Therapy (Continued)

reflection of their behavior during the discussion period, and silences in the group are dealt with by the group leader. Group members are sometimes divided into pairs to enable members to share their feelings about each other and to develop trust and empathy for and with each other.

In attempting to achieve self-insight members are encouraged to talk about their previous drinking behavior and to examine critically the precipitating factors which resulted in their decision to seek help with their problem at Henwood. While "drunk-a-logs" are tolerated, group leaders discourage this practice by introducing exercises or activities that will demonstrate alternative and more effective modes of behavior in coping with their problems. The group leader prefaces these exercises by suggesting that members listen and observe the behavior taking place during the exercises and note what feelings they are experiencing during its performance. Members are encouraged to verbalize changes they have observed in each other and to relate whatever modifications have taken place in their own attitudes toward themselves and others.

Much of the final treatment goal, insight into others, is subsumed under the self-insight description of the preceding paragraph. Members are encouraged to observe and attend to each other's behavior, both verbal and nonverbal, and to confront each other if there

APPENDIX B
Henwood Group Therapy (Continued)

is disagreement or lack of clarity in what another member has stated or expressed. Whenever possible, wives are brought into group treatment sessions for the purpose of increasing their understanding of alcoholism and to provide them, and their husbands, with an opportunity to view their own situation more realistically and objectively.

In summary, Henwood counselors utilize a nonpsychoanalytic, eclectic approach to therapy. While there are many variations of this approach due to the personal style of the counselor, his experience, and the extent and quality of his formal training, the predominant attitude and methodology reflects a common set of problem-solving techniques and practices employed in group treatment sessions.

APPENDIX C

APPENDIX C

Alcohol Questionnaire

(Covert Sensitization)

Dr. Joseph Cautela

1. When did you take your first drink? _____

2. How long have you been drinking? _____

3. When was the last time you had a drink? _____

4. What is the longest amount of time you have abstained from drinking since you have had this drinking problem? _____

5. What alcoholic beverages do you prefer? _____

6. Which alcoholic beverages do you usually drink? List the ones you usually drink, with the most frequent one first:

   a. _____ e. _____

   b. _____ f. _____

   c. _____ g. _____

   d. _____ h. _____

7. What are your favorite drinks? List your most favorite first:

   a. _____ d. _____

   b. _____ e. _____

   c. _____ f. _____

8. Where do you usually do your drinking? Give the most frequent place first:

   a. _____ d. _____

   b. _____ e. _____

   c. _____ f. _____

9. Do you prefer to drink alone? _____ or with someone else? _____
(check one)

10. Do you usually drink alone? _____ or with someone else? _____
(check one)

11. Does your husband_____ wife_____ drink? _____

12. If so, how much? A lot _____ Moderately _____ Little _____

13. Does or did your father drink? _____ If so, how much?

A lot _____ Moderately _____ Little _____

14. Does or did your mother drink? _____ If so, how much?

A lot _____ Moderately _____ Little _____

15. Are there any of your relatives, including close family, who have a drinking problem? List the individuals according to their relationship to you, and specify how much they drink:

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

16. Why do you drink? Give any possible reason.

17. Do you want to stop. If so, why?

APPENDIX D

APPENDIX D

Counselor Information Sheet

File No. _____

NAME: _____

ADDRESS: _____

TELEPHONE NO. _____

WITH WHOM ARE YOU NOW LIVING? (List people) _____

_____

DO YOU LIVE IN A HOUSE, HOTEL, ROOM, APARTMENT, ETC. ?

_____

AGE: _____ SEX: _____ OCCUPATION: _____

EMPLOYMENT STATUS: _____ RELIGIOUS AFFILIATION:

_____

CHURCH ATTENDANCE: _____ ETHNICITY: _____

RACE: _____ MARITAL STATUS: _____

Summary of Treatment Procedure

_____

_____

Session	Session
1	11
2	12
3	13
4	14
5	15

APPENDIX D
Counselor Information Sheet (Continued)

Session
16
17
18
19
20

Relaxation Data

Date: _____

A. PRELIMINARY INFORMATION:

1. S's Name: _____

2. Specific reason for teaching relaxation: _____

_____

3. In what parts of his body does "S" feel tension when he is upset?

_____

B. EVALUATION OF RELAXATION:

Parts of Body	Week 1					Week 2					Week 3					Week 4				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
D Hand & Forearm																				
D Biceps																				
ND Hand & Forearm																				
ND Biceps																				
Forehead																				
Nose																				
Mouth & Jaw																				
Chin & Throat																				
Chest & Back																				
Abdomen																				
Rt. Upper Leg																				
Rt. Calf																				
Rt. Foot																				
Left Upper Leg																				
Left. Calf																				
Left Foot																				

Relaxation Data
B. Evaluation (Continued)

Over-all Rating:				
Time Taken In Office:				
Home Practice: 1. Number of times 2. Length of each time 3. S's rating of practice session				

C. TIMES ESTABLISHED FOR "S" TO PRACTICE RELAXATION:

1. _____

2. _____

Final Report

File No. _____

NAME: _____ DATE: _____

WHY TREATMENT TERMINATED:

EVALUATION OF TREATMENT:

PROGNOSIS:

Counselor: _____

Interview Record Sheet

File No. _____

Date _____

Counselor: _____

APPENDIX E

APPENDIX E

Guidelines Re Visual Imagery Scale

INSTRUCTIONS:

Nouns differ in their capacity to arouse mental images of things or events. Some words arouse a sensory experience, such as a mental picture or sound, very quickly and easily, whereas others may do so with difficulty (i.e., after a long delay) or not at all. The purpose of this scale is to rate a list of words as to the ease or difficulty with which they arouse mental images.

TO THE PATIENT:

"Any word on the list which, in your estimation, arouses a mental image (i.e., a mental picture) very quickly and very easily should be given a high imagery rating, for example, in "flower." Likewise, any word on the list which arouses a mental image with difficulty, or not at all, should be given a low imagery rating, for example, "idea." Any questions about what you are to do? Alright, now try the two practice examples "apple," and "fact," that appear on the first page."

NOTE:

If the patient rates <u>both</u> "apple" and "fact" with a high imagery rating, I would question further to determine if he understands what he is expected to do with the words. I would add that he is not being

APPENDIX E
Guidelines Re Visual
Imagery Scale (Continued)

asked whether he knows the meaning of the words but is being asked to imagine situations and events which these words bring to his mind or do not bring to his mind. It would probably be helpful to the patient to add a further instruction such as:

"Try to imagine that you can visualize a situation or an event that the word suggests to you...that you are actually there and can feel yourself in the situation."

MAXIMUM SCORE: 70

HIGH VISUALIZERS: 47 and above

LOW VISUALIZERS: 45 and below

APPENDIX E
(Continued)

Test One

Instructions:

I want you to picture in your mind each of the following words. Any words which you can see or imagine very quickly and very easily, check Very Clear (Easy); any word that is hard to see, check Very Faint (Hard).

Below are two examples. Close your eyes and try to picture each word as clearly as you can, then make a check mark along side of how clearly you imagine or picture the word.

Examples:

APPLE

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

FACT

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

Are there any questions? You may go back and look at the instructions if you want.

DISEASE

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear Nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

JOKE

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

REFLEX

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear Nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

STUB

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear Nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

DELIRIUM

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear Nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

HEALTH

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear Nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

AUTHOR

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

PLEASURE

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

CLEANNESS

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

SPREE

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

NAME: _____

APPENDIX E
(Continued)

Test Two

Instructions:

I want you to picture in your mind each of the following words. Any words which you can see or imagine very quickly and very easily check Very Clear (Easy); any word that is hard to see, check Very Faint (Hard).

Below are two examples. Close your eyes and try to picture each word as clearly as you can, then make a check mark along side of how clearly you imagine or picture the word.

Examples:

APPLE

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

FACT

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

Are there any questions? You may go back and look at the instructions if you want.

PROPERTY

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear Nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

COPYBOOK

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear Nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

PEP

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear Nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

SPEECH

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear Nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

CRIME

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear Nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

KINDNESS

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear Nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

DREAM

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear Nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

MILEAGE

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear Nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

INFECTION

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear Nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

HEAVEN

IMAGE OF WORD	CHECK
Very Clear	
Quite Clear	
Slightly Clear	
Neither Clear Nor Faint	
Slightly Faint	
Quite Faint	
Very Faint	

NAME: _____

APPENDIX F

APPENDIX F

Follow-Up Drinking Scale

Scale Items	Score 0	Score 1
1. Have you had any alcoholic beverages to drink since leaving Henwood, and if so, how often?	Not drinking.	Any drinking: From "less than once a month," to "almost every day or steady."
2. How long has your dry period been since leaving Henwood?	Three months or more.	Less than three months.
3. Have you had any treatment for drinking since leaving Henwood?	No treatment needed.	Some treatment needed.
4. Have you been intoxicated since leaving Henwood?	Never intoxicated	Any intoxication: From "less than once a month, to "several times a week."
5. How many days did you lose from work because of drinking, and did you lose any jobs?	Worked, and no days on job lost because of drinking.	Never worked, or lost days, or jobs because of drinking.

RELAXATION PRACTICE:

Frequency:

Intensity:

Duration:

Comments:

COVERT SENSITIZATION PRACTICE:

Frequency:

Intensity:

Duration:

TABLE VIII

DISTRIBUTION OF FOLLOW-UP SCORES
FOR TREATMENT GROUP ONE

Score	Frequency	Cumulative Proportion
0	6	40.0
1	0	40.0
2	0	40.0
3	0	40.0
4	6	80.0
5	3	100.0
Total	15	

TABLE IX

DISTRIBUTION OF FOLLOW-UP SCORES
FOR TREATMENT GROUP TWO

Score	Frequency	Cumulative Proportion
0	5	29.4
1	0	29.4
2	0	29.4
3	0	29.4
4	4	52.9
5	8	100.0
Total	17	

S. E. Index

NAME: _____

DIRECTIONS:

In the following questions, mark your answer by putting a circle in the right place. For example, in the question "Do you have a car?" draw a circle around the "Yes", if you have a car, and around the "No", if you do not. Be sure to answer all the questions.

1. Do you have a car?	Yes	No
2. Do you have a garage or carport?	Yes	No
3. Did you go to high school?	Yes	No
4. Did your wife go to high school?	Yes	No
5. Did you go to university?	Yes	No
6. Did your wife go to university?	Yes	No
7. Is there a writing desk in your home?	Yes	No
8. Do you have a stereo or record player?	Yes	No
9. Do you have a piano at home?	Yes	No
10. Do you get a daily newspaper at home?	Yes	No
11. Do you own your own home?	Yes	No
12. Is there an encyclopedia in your home?	Yes	No
13. Do you have more than 100 hard-cover books? (4 shelves — 3 feet long)	Yes	No
14. Did you borrow any books from the library in the last year?	Yes	No
15. Do you leave town each year for a holiday?	Yes	No

APPENDIX F
S. E. Index (Continued)

16.	Do you belong to any club where you have to pay fees?	Yes	No
17.	Does your wife belong to any clubs or organizations such as study, church, or social club?	Yes	No
18.	Have you ever had lessons in music, dancing, art, swimming, etc., outside of school?	Yes	No

TABLE X

SUMMARY OF THE TOTAL SAMPLE RAW SCORES ON THE OTIS QUICK-SCORING TESTS OF MENTAL ABILITY, THE MAUDSLEY PERSONALITY INVENTORY AND THE GOUGH HOME INDEX SCALE

Subject	Otis Beta I. Q.	Otis Gamma I. Q.	Maudsley Personality Introversion	Maudsley Personality Extraversion	Gough Home Index
1	96		19	39	11
2		109	33	10	11
3[a]	56		17	29	10
4		95	24	38	11
5	85		44	13	3
6		132	22	32	11
7		102	36	28	17
8[b]	53		28	37	5
9	48		48	29	7
10	97		44	17	6
11	62		40	30	0
12		97	43	38	7
13		85	34	36	8
14	75		40	13	1
15	89		20	22	3
16	95		46	18	8
17	101		30	24	8
18	132		8	34	17
19	105		40	15	7
20	86		44	6	8
21		95	4	14	4
22[c]	53		36	21	8
23		108	31	30	10
24		97	24	37	6
25[d]		68	36	28	2
26	79		26	14	1
27		85	13	33	15
28		113	34	16	6
29		118	36	10	11
30		104	24	40	15
31	67		46	20	9
32		90	34	37	3

APPENDIX F
Table X (Continued)

NOTE: Tests administered by trained graduate students.

[a]Results doubtful because of hearing disability.
[b]Results doubtful because of difficulty in comprehending test instructions.
[c]Results doubtful because of hearing and vision difficulty.
[d]Results doubtful because of negative test-taking behavior.